REPORT

OF THE

CONSERVATOR OF FORESTS,

FOR THE

OFFICIAL YEAR

1867-68.

Madras:
GANTZ BROTHERS
ADELPHI PRESS, 175, MOUNT ROAD.
1868.

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OFFICE OF CONSERVATOR OF FORESTS:
CAMP OOTACAMUND, 1*st April* 1868.

From

MAJOR R. H. BEDDOME,

Officiating Conservator of Forests;

To

W. HUDLESTON, ESQ.,

Secretary to Government, Revenue Department,
Fort Saint George.

SIR,—I have the honor to forward the Annual Report of my Department for 1867-68.

2. Dr. Cleghorn, the Conservator, returned from special duty in Bengal in April, and remained in charge of the Office until the end of October. During that time he inspected the Teak plantation at Nellumbur and the various plantations on the Nilgiris, the Casuarina plantations in North Arcot, the Red Sanders plantations in the Cuddapah district, and the Mudumallay forests and establishment. In April, the Officiating Conservator (then Deputy Conservator) accompanied Major Pearson, the Conservator of Forests, Central Provinces, in a tour over the Nilgiris plantations, Wynaad and the Nellumbur Teak plantations. In June, July, and August he went a lengthened tour throughout the forests of Madura and Tinnevelly (the report of which is published in G. O. No. 29, dated 6th January 1868.) In September he visited the Anamallay Range; in October he was engaged at Madras with the Conservator previous to that Officer's departure for Europe, and he resumed charge of the Office at the end of that month; in November he visited the Wynaad forests and the demarcation operations; in December he visited South Canara, and in January the Cuddapah and Kurnool ranges and establishments, and the establishment and plantations in North Arcot. In February he met the Inspector General of Forests to the Government of India (Dr. Brandis) at Madras, and accompanied him to Bangalore, the Salem forests, the forests and plantations of the Nilgiris, the Wynaad, and the Teak plantations at Nellumbur.

3. GOOMSUR.—*Superintendence.*—These forests have remained under Overseer Mr. Maccally, 2nd Class Overseer. He has been very attentive to his duties.

4. *Conservancy.*—Much attention has been paid to the preservation of Sâl saplings.

5. *Operations.*—These forests are chiefly worked by the License and Voucher system, but some of the finer tracts are reserved for departmental working, as the department fells all the Sâl timber required for Government departments. The Department Public Works were supplied with 424 Sâl logs during the year. 109 Sâl logs were floated from the forests to the depôts.

6. *Purchase of Plant.*—Four pairs of buffaloes, and four carts were purchased from working charges, for a sum of Rupees 403-7-0.

7. *Health of Establishment.*—Slight fever only has prevailed.

8. *Salaries of Establishment not sufficient.*—The salaries of the Overseer and of the Peons of his establishment are very low and an increase is desirable. This will be laid before Government separately.

9. *Financial Results.*

Expenditure.	RS.	A.	P.	RS.	A.	P.
Establishment	1,992	0	0			
Contingencies	154	13	6			
Conservancy and working	2,388	0	4			
				4,534	13	10
Receipts.						
Sale of Timber from Depôts	231	8	0			
Seignorage	3,641	9	10			
Miscellaneous	9	11	4			
Timber supplied to D. P. W	2,892	1	6			
				6,774	14	8
Balance in favor of forests	2,240	0	10			
Value of Timber on hand—						
31st March 1868 ... 1,211 4 0						
31st March 1867 .. 1,403 4 0						
Deduct deficiency in stock of Timber	192	0	0			
Result for the year ..... surplus...	.....			2,048	0	10

10. GOLCONDAH FORESTS.—These forests have remained under the Collector, the expenditure has been Rupees 1,238-0-0 and the receipts Rupees 1,347-7-10.

11. CUDDAPAH.—*Increase to Establishment.*—Mr. Yarde has remained in charge of this range during the year. The operations in connection with Railway fuel, and the formation of fuel reserves and plantations, has caused a great increase to the work, and a Second Class Overseer was sanctioned in October last as an addition to the establishment—(vide G. O. No. 2395 of the 11th October 1867.) Mr. Brougham, the Overseer of North Arcot, was promoted to this grade, but remained temporarily in North Arcot, and Mr. Thistlethwaite was appointed to the 3rd Class vacancy, and is at present stationed in the Cuddapah district.

12. *Forest operations.*—These forests have been entirely worked by the License and Voucher system during the year. The collections have been very good in all the taluqs, except that of Dhoor, where the presence of a man-eating tiger deterred parties from visiting the forest. No timber was felled departmentally for the Depôt, as the stock on hand was sufficient.

13. *Theft and Mischief.*—Thirty-one cases were prosecuted during the year. In twenty-eight cases in which 191 people were concerned, the parties were punished; in three cases only in which five men were concerned, there was an acquittal.

14. *Conservancy.*—Great attention has been paid by the Assistant Conservator to forest conservancy, such as the clearing of creepers and noxious under-growth, &c., and preventing the felling of unripe trees, checking smuggling, &c. The greatest difficulty is the prevention of forest fires.

15. *Plantations.*—The year was a most unsuccessful one for planting, as there was scarcely any rain. The old plants are doing well, but of 3,000 seedlings of Red Sanders (Pterocarpus Santalinus) and 1,200 Thambà (Shorea Tambagaia) and some wild mangoo that were planted out; more than half succumbed to the drought. The experimental planting of various indigenous jungle trees is receiving attention.

16. *Fever.*—The year was unusually feverish, and the establishment suffered considerably.

17. *Fuel reserves.*—The tract of forest selected for a fuel reserve in the Balapilly jungles, contiguous to the line of Railway, has been fenced in at a cost of Rupees 640-2-0; it contains about four square miles. Further reserves will be necessary, and the large amount now being paid by the

Railway Company for fuel, authorizes a considerable expenditure for this purpose. Another tract has been selected, but pending a reference to the Revenue Board concerning the claims of two ryots to a portion of this tract of jungle, the limits of the reserve cannot be fixed. The sowing of tree seed broadcast has been attempted in this district as well as in Salem, but has proved a failure; and it is to be feared it will always be unsatisfactory in any of our drier districts, and that regular planting from nursery beds will be cheaper in the end. Each of the reserves will have nurseries attached to them to supply plants to fill up gaps.

18. *Railway fuel.*—The seignorage on fuel for the locomotives was Rupees 12,121-4-1 for the year.

19. *Depôt.*—557 cubic feet of timber (value Rs. 695-11-8) was supplied from the Depôt during the year to the public; there were no Indents from the Public Works Department.

20. *Revenue and Expenditure.*—The receipts for the year have been Rupees 36,666-14-11; the expenditure Rupees 6,595-11-1, against Rupees 25,876-12-8, and Rupees 6,262-11-0 last year. There is a stock of timber on hand valued at Rupees 6,868-9-7 against Rupees 7,564-5-3, the value on hand at the close of last year.

21. *Financial Results.*

	RS.	A.	P.	RS.	A.	P.
Expenditure.						
Establishment	4,567	3	1			
Working charges	2,015	8	0			
Contingencies	13	0	0			
				6,595	11	1
Receipts.						
Seignorage on Timber	21,290	8	11			
Do. on Bamboos	419	1	0			
Do. on Firewood	1,323	0	0			
Do. on Charcoal	361	9	0			
Railway fuel	12,121	4	1			
Miscellaneous	47	0	0			
Sale of Depôt Timber	695	11	8			
Confiscations	408	12	3			
				36,666	14	11
Balance in favor of forests	.....			30,071	3	10
Value of Timber in Depôt on 31st March 1868 (cubic feet 5811 = 11¾ inches)	6,868	9	7			
Deduct value on 31st March 1867	7,564	5	3			
Deduct deficiency in stock of Timber	.....			695	11	8
Financial result for 1867-68	.....			29,375	8	2

22. KURNOOL.—*Superintendence.*—These forests have remained under the charge of Mr. Sheffield for the year, and have been worked chiefly on the License System.

23. *A Writer sanctioned.*—A Writer on Rupees 25 to be entertained from 1st April 1868 was sanctioned in G. O. No. 2515 of the 25th October 1867. Two extra Peons were sanctioned in lieu of a Taluq Goomastah, whose services were discontinued (see Proceedings of Government of India, dated 28th January 1868, communicated in G. O. No. 430, dated 15th February 1868.)

24. *Yellaconda Hill Forests placed under conservancy.*—The Kurnool side of the Yellaconda Hills near Cumbum on the east side of the Nallay Mallay Range was placed under conservancy in May last (vide G. O. No. 987, dated 1st May 1867), and the entertainment of two additional Peons was sanctioned. They are a low range, running nearly due north from the Cuddapah District through the Cumbum Taluq, and dividing that taluq from Nellore, the water-shed being the boundary line; they are very rocky, and the timber is generally stunted but valuable on account of the scarcity of wood in this part of the district.

25. *Conservancy.*—Conservancy, as far as it can be carried out under the License System, has received much attention, and the Assistant Conservator has been constantly in the forests throughout the range.

26. *Man-eating Tigers.*—The Nallay Mallay Range and the forests about the foot have been infested with tigers, and no less than five man-eaters have been reported, and our revenue in some places has suffered considerably, as the wood-cutters were afraid to enter the forest. A beat was organized by the Police Officer of the District with a view to killing a very famous tiger on the Nundy Cadama Ghaut, that has killed upwards of one hundred persons, and one tiger was shot that was supposed to be the one sought for; but as people have been killed since, this seems doubtful. A large steel-spring tiger trap has been supplied to the Assistant Conservator.

27. *Confiscations.*—The sale of confiscated wood realized Rupees 1,066-10-6, of which sum Rupees 844-10-6 were credited to Government, and 222 Rupees were paid to informers. The amount credited to Government under this head since the forests were placed under the department, has been as follows:—

1863-64	Rupees	4,949	1	2
1864-65	„	3,551	6	11
1865-66	„	2,168	1	3
1866-67	„	1,792	13	3
1867-68	„	884	10	6

This shows a great decrease every year in smuggling In most cases when parties have been prosecuted during the year, convictions have been obtained.

28. *Timber, &c. taken on Seignorage.*—The following is a list of the timber, &c. removed from the forests by license during the year.—

	Bandy loads.	Head loads.
Reserved Timber at 3 Rupees per bandy.....	6,331	...
Do. at 2 „ „	25	...
Junglewood at 1 „ „	8,722	...
Bamboos at 5 Annas „	5,729	9,117
Firewood at 4 „ „	5,031	...
Do. with free pass.....	4,107	...
Timber for agricultural purposes.....	570	...
Charcoal.....	...	14,548

29. *Timber felled by Department.*—3,059 cubic feet of Nalla Maddee (Terminalia) in logs of large scantling, have been felled by the department. This is nearly all required for the irrigation works.

30. *Depôt.*—690$\frac{7}{12}$ cubic feet of timber was sold from the Depôt during the year, and a small amount of timber was supplied to the D. P. W.

31. *Roads.*—Four miles and 626 yards of the road from Erunupad near Nundial to the foot of the Muttiondah Ghaut up the Nullay Mullays has been completed at the cost of Rs. 3,750. This work was undertaken by the Assistant Conservator, the funds being supplied from the District Road Fund (vide G. O. No. 2580, dated 1st November 1867). The work has been very well executed; the remaining three miles of this road, which will be completed in 1868-69, is through rather dense jungle, and there will be some difficulty about labor; but the Assistant Conservator expects to be able to complete it with the balance of the estimate (3,700 Rupees) which is to be met from the Forest Budget.

32. *Elephants.*—Two elephants were purchased for this forest last year, they were kept at the Anamallais during the hot season; and were forwarded by train viâ Cuddapah in December. They are of great use, as by their aid timber of large scantling can be brought from the forests. The great scarcity of water on these hills during the hot season is a drawback.

33. *Teak Plantation.*—It cannot be reported that the small experimental teak plantation on these hills is a success; the growth is very slow. Teak grows well in some spots on these hills, but the climate generally is far too dry, and teak plantations will not pay, it is feared.

34. *Nundial Nursery.*—There is a good supply of seedlings in the Nundial Nursery for district planting. Experiments are about to be made in planting all kinds of jungle trees.

35. *Cinchonas.*—All the Cinchonas mentioned in the last report died, and at Dr. Cleghorn's suggestions, the Assistant Conservator took another case of sixty plants from Ootacamund last September; these have been carefully sheltered and watered, and they received every care, but are all dead, except sixteen, which will also in all probability die before the end of the hot season. The experiment should be abandoned, as the plant has no chance of succeeding in the dry climate of these hills,

36. *Grazing dues.*—The grazing dues collected in the reserved forests are still credited to land revenue, but the question is now before the Board; the Collector is of opinion that they should form a part of the forest revenue.

37. *Iron forges.*—There are at present fifty-two Iron forges at work in the district (all in the Serwell Taluq); they pay a seignorage of one anna per cavadie load of charcoal, and each forge takes about forty-eight loads per mensem (value 3 Rupees.) This is collected by the Village Reddies, who issue tickets and receive a per-centage of 1 Anna in each Rupee. A compounded monthly payment would be a better plan, and give less opening to peculation.

38. *Health of Establishment.*—Fever has been very prevalent, and many of the Establishment have suffered severely, but no deaths have occurred,

39. *Financial Results.*

Expenditure.	RS.	A.	P.	RS.	A.	P.
Establishment	6,102	12	0			
Working charges	2,676	9	9			
				8,779	5	9
Receipts.						
Seignorage	34,284	9	5			
Sale of Timber from Depôt	922	2	4			
Confiscations	844	10	6			
Forest products	137	8	0			
				36,188	14	3
Balance in favor of forests	.....			27,409	8	6
Value of Timber on hand 31st March 1868	4,307	9	4			
Deduct value in Depôt 31st March 1867	2,235	1	8			
Add surplus stock	.....			2,072	7	8
Financial result for 1867-68	.....			29,482	0	2

40. North Arcot.—*Superintendence.*—Overseer Brougham has worked this range under Mr. Yarde during the year. He was promoted to 2nd Class in December and posted to Cuddapah, but he remains temporarily in this district.

41. *Additional forests taken over by the Department.*—In September the whole of the jungles in the Vellore and Polloor taluq were handed over to the Department—(vide G. O. No. 2090, dated 6th September). This has made conservancy easier, as there is less opening for smuggling. The Assistant Conservator reports that there is still a portion of jungle in the Chendragherry Taluq, which it is desirable to place under the department. There is also a tract near Amboor and Goriattum, between the Salem and North Arcot limits, still under the Revenue Authorities, which ought to be placed under the special department, as the Salem and North Arcot Establishments would then join. The Collector has been referred to on these subjects.

42. *Increase to Establishments.*—The employment of two Pygusts on Rs. 8, and three Peons on Rs. 6 each, (a monthly charge of Rupees 34) for the conservancy of the Vellore and Polur jungles was sanctioned by the Government of India in their Resolution, dated 11th March 1868, No. 102-F, communicated in G. O. No. 852, dated 1st April 1868.

43. *Theft and Mischief.*—Ten cases in which nineteen persons were concerned were tried during the year before the Magistrate; there were seven convictions and three acquittals.

44. *Confiscations.*—The sale of confiscated timber realized Rupees 615-5-8; of this sum, Rupees 249-12-5 were paid to informers, and the balance credited to Government.

45. *Plantations.*—A plantation was commenced at Ammerdy in September. Cassia floi ida, Cassia Roxburghii, Cassia fistula, Sandalwood, Red Sanders (Pterocarpus Santalinus), Wild Mangoe, Terminalia and Casuarina, have been put down; the seeds have germinated well, and the nursery now contains 8,000 plants of different kinds, but the extreme dryness of the season prevented planting out to any extent. The monsoon almost entirely failed, or a large number of plants would have been put out in November and December.

46. *Casuarina plantation.*—A Casuarina plantation was commenced near Teroovellum last year, (as a famine work) by the Collector of North Arcot. 198 acres of sandy tract were enclosed, wells were dug, and nurseries formed, and 18,000 young Casurinas were planted out. This was handed over to our department on the 1st January last—(vide G. O. No. 2,559 of the 31st October 1867). It is situated close to the Railway, eight miles east of Vellore, at the confluence of the Poiney and Palar rivers; it has since been enlarged by the purchase of 160 acres at a cost of Rupees 861-10-9. Planting has been proceeded with, and there are now about 140 acres planted, and large nursery beds have been laid down.

The growth of the Casuarina is very rapid, the trees about eighteen months old are 16 or 17 feet high and 9 inches girth.

It may be predicted that Casuarina planting will be the most paying of any for Railway fuel. The difficulty is to get tracts suitable. A sandy soil with water at eight feet below the surface being required, and this is difficult to find inland except near large rivers. In elevated parts of these tracts where water is considerably lower than eight feet, the growth of the tree is much slower. There are numerous private Casuarina plantations near Madras.

The establishment for this plantation is at present defrayed from the working charges of the range Proposals will shortly be submitted for a small fixed establishment.

47. *Health of Establishment.*—This has been generally good, a few cases of fever only having occurred.

48. *Revenue.*—The receipts for the year have been Rupees 9,910-8-9, and expenditure Rupees 3,872-14-11 against Rupees 2,743-7-5, and Rupees 2,117 for last year. The large increase is owing to the re-imposition of the bamboo seignorage (which alone has more than paid the whole establishment and working charges of the range) and to our having taken over some additional forest tracts.

49. *Financial Results.*

	RS.	A.	P.	RS.	A.	P.
Expenditure.						
Establishment	2,498	0	0			
Working charges	1,374	14	11			
				3,872	14	11
Receipts.						
Seignorage on Timber	3,442	2	0			
Do. on Bamboos	3,913	13	0			
Do. on Firewood	1,825	13	6			
Do. on Charcoal	290	6	0			
Confiscations	365	8	3			
Depôt timber	61	6	0			
				9,899	0	9

	Rs.	A.	P.	Rs.	A.	P.
Balance in favor of forests.....	.....			6,026	1	10
Value of Timber in Depôt on 31st March 1868	627	3	4			
Do. on 31st March 1867	688	9	4			
Deduct deficit in Timber	.....			61	6	0
Financial results for 1867-68	.....			5,964	11	10

50. South Arcot.—*Superintendence.*—This Range was under the charge of Lieutenant Walker during the year, and the forests were worked by Overseer Rungiah Naidu, who has given Lieutenant Walker every satisfaction.

51. *Establishment.*—One Goomastah on Rupees 8, one Pygust on Rupees 7, and six Peons on Rupees 5 each were transferred to this range from that of Salem on the 1st of November—(vide G. O. No. 2515 of the 25th October 1867.)

52. *Conservancy.*—The License and Voucher System has been partially abandoned, and a small depôt formed at Chengamah.

53. *Operations.*—632 cubic feet of timber was felled and stored in depôt. 540 cubic feet of timber was sold.

Timber, &c. removed on License.

1,537 bandy loads of Timber.
1,455 do. of Firewood, Bamboos, &c.
562 head loads of Timber.
5,706 do of Bamboos, Firewood, &c.

Timber, &c. given free to Ryots.

141¾ bandy loads of Timber.
53 do. of Bamboos.

54. *Confiscations.*—The sales of confiscated timber realized Rupees 341-11-0; of this, Rupees 220-15-3 were credited to Government, and Rupees 81-10-9 were paid to informers. Criminal prosecutions have generally been followed by convictions and punishment.

55. *Health of Establishment.*—This has been very good.

56. *Financial Results.*

Expenditure.	Rs.	A.	P.	Rs.	A.	P.
Establishment.....	*2,097	13	5			
Working charges.....	245	3	4			
				2,343	0	9
Receipts.						
Sale of Timber, &c. from Depôt.....	264	0	0			
Seignorage on Timber, Bamboos, &c.....	3,825	4	0			
Confiscations.....	220	15	3			
				4,310	3	3
Balance in favor of forests.....	.....			1,967	2	6
Value of Timber felled during the year.....	308	0	0			
Deduct sold.....	264	0	0			
Add balance of Timber on 31st March 1868	.....			44	0	0
Financial results for 1867-68.....	.....			2,011	2	6

* The pay of the Deputy Conservator for two months is debited against this Range.

57. MADURA.—*Superintendence.*—These forests have remained under Mr. Turnbull, 2nd Class Overseer, during the year. Lieutenant Fullerton, Second Class Deputy Conservator, has been transferred from Wynaad to the united charge of Madura and Tinnevelly, but he has not yet joined.

58. *Establishment.*—A Third Class Overseer on Rupees 60. Rupees 15* travelling allowance per mensem has been sanctioned, but he will not be appointed until the Deputy Conservator has assumed charge.

* G. O. No. 451, dated 18th February 1868.

One extra Duffadar on Rupees 15 and six Peons on Rupees 6 each per mensem, and an increase of 10 Rupees to the Writer's pay was sanctioned by the Government of India—(vide G. O. No. 1702 of the 26th July 1867.)

59. *Smuggling, &c.*—Out of 49 persons concerned in nine cases of forest theft, 38 were convicted and punished, and 11 acquitted.

It is feared that smuggling is very prevalent in this range, but after the Deputy Conservator has joined and become well acquainted with the range, a thorough demarcation of Government forests will be commenced.

60. *Health of Establishment.*—Fever has been very prevalent in the Cumbum Valley; the rest of the range has been healthy.

61. *Financial Results.*

Expenditure.	RS.	A.	P.	RS.	A.	P.
Establishment	3,249	0	0			
Contingencies	67	3	0			
Working charges	4,388	0	0			
				7,704	3	0
Receipts.						
Seignorage	4,861	1	0			
Sale of Timber	143	8	4			
Miscellaneous receipt	25	0	0			
				5,029	9	4
Balance against forests				2,674	9	8
Value of Timber on hand on 31st March 1868.	7,280	6	9			
Do. on 31st March 1867.	3,241	9	11			
Surplus stock				4,038	12	10
Financial results for the year				1,364	3	2

62. TINNEVELLY.—*Superintendence.*—The forests of North Tinnevelly have remained under Mr. Turnbull for the year. The Officiating Conservator thoroughly explored the whole range last July and August—(vide Report in G. O. No. 29 of the 6th January 1868) and the forests of South Tinnevelly are to be added to the range when Lieutenant Fullerton, the Deputy Conservator, joins.

63. *Establishment.*—A Second Class Overseer on Rupees 80. Rupees 30† travelling allowance per mensem has been sanctioned, but he will be appointed after the Deputy Conservator has joined.

† G. O. No. 451, dated 18th February 1868.

An extra establishment for the Wartrap and Vasoodava Nullur forests, consisting of two Duffadars at 15 Rupees each and four Peons at 6 Rupees each, or a monthly charge of Rupees 54, was sanctioned by the Government of India—(vide G. O. No. 1702 of the 26th July 1867.)

64. *Smuggling, &c.*—Out of 47 persons concerned in twelve cases of forest theft and mischief, 36 were convicted and punished, and 11 acquitted.

65. *Health of Establishment.*—This has been good.

66. *Financial results.*

Expenditure.	RS.	A.	P.	RS.	A.	P.
Establishment.....	1,055	0	0			
Working charges.....	200	0	0			
				1,255	0	0
Receipts.						
Seignorage, &c.....	8,195	7	2			
				8,195	7	2
Balance in favor of Government				6,940	7	2

67. ANAMALLAYS.—*Superintendence.*—These forests have remained under Lieutenant Gosling during the year.

68. *Overseers.*—The Senior Overseer, Mr. Truter, resigned on account of his ill health, and Mr. Storey was appointed to the post.

69. *Renewal of the Lease of the Nambiddy's forest.*—The larger portion of the Teak forest under our department belongs to the Colungode Nambiddy. It was leased to Government in 1850, on a lease for sixteen years, which expired at the end of 1866; and for nearly a year it was very doubtful whether the Nambiddy would again lease the forest to Government. No one, however, came forward with a more advantageous offer than that of Government, and on the 16th of October last the Collector of Malabar obtained a further lease for the period of ninety-nine years. As in the former agreement Government do not pay any rent, but only a fixed seignorage upon what is felled, and the rates fixed are as follows :—

Teak and Blackwood.....	Rs.	6	0	per tree.
Vengay and Kara Mardah.....	„	3	0	do
Agani Agil and Irul	„	3	0	do
Ben Tek and Pilla Mardah.....	„	2	8	do

Half the above rates as seignorage upon any of the above trees planted by Government when they may be felled for sale as timber, but not when felled as saplings less than 30 inches in circumference.

No other trees besides the seven enumerated to pay any seignorage, nor any of these when cut for auxillary purposes.

Government to pay an advance of 30,000 Rupees, and until this is liquidated, no stump fee becoming due to be paid in money.

The former lease was only for Teak and the stump fee was 5 Rupees per tree, so that the Nambiddy was entitled to allow any one to enter the forests for the purpose of felling Blackwood and Vengay, &c., which was objectionable.

The forest has been very extensively worked for the last sixteen years and there are not very many large Teak trees at present left; second and third class trees, however, are very numerous, and considering that the growth of Teak is finer in this tract than in any other forest in India, it was very desirable to secure it for future requirements. The advance is rather considerable, and certainly much in excess of what any private individuals would have paid, and it will be a considerable time before it can be worked out; but otherwise the forest has been obtained on favorable terms, and if it had fallen to private contractors or to a Company, the forest would probably have been cleared out without any thought for future requirements.

The clause relating to half payments for all planted trees will hardly affect the department, as in the event of any planting, it would be carried on in the Government forest proper.

70. *Demarcation, &c.*—Now that the lease has been obtained for ninety-nine years, a proper demarcation is very necessary; it also seems desirable to treat this tract as a regular reserve, and to carry out systematic conservancy, such as the pruning and clearing of all saplings, and (more important than all) the exclusion of fire. This can only be effected by the exclusion of

the Chetties and others from the low country who come up to trade with the Kaders, and by the forest being declared a strict reserve.

71. *Plantation.*—Planting might be commenced in the portion belonging to Government.

72. *Cart road up the Ghaut.*—Government have sanctioned Rs. 5,000 to be expended in making a cart road up the Ghaut in lieu of the present rough timber slip; it will be a great improvement.

73. *A claim to Land at the foot of the slip.*—One Ramasawmy Moodelliar, a rich ryot in the Polachy Taluq, has set up a claim to a large piece of land at the foot of the timber slip, hitherto used for the grazing of our elephants during the dry season, and he claims all the land on which the Government Timber Depôt and buildings have stood for the last seventeen years. It appears that he bought a piece of land at the foot of the hills from a Mr. Scott at Coimbatore, who had purchased it from the executors of a deceased forest overseer. The land was originally granted to the Overseer by the Collector (before the forests were placed under the Conservancy Department) to give him some interest in remaining near the forests, and the limits were never clearly defined; the subsequent sales of this went on without the knowledge of the Forest Department, and the first intimation the Department had of it was its being claimed by Ramasawmy Moodelliar.

The Collector of Coimbatore has been addressed several times on the subject by the Conservator and the Officiating Conservator, but the case still remains unsettled.

74. *Repair of the Road to Mungarah.*—The road from the foot of the timber slip to Mungarah was put in repair at a cost of Rs. 900.

75. *Ponachy forest.*—The small tract of second class Teak forest up in the Ponachy valley, which was leased to Mr. Lowry, has reverted to Government. Mr. Lowry had not funds to carry on operations, and has agreed to give up his lease and all the timber he has felled which he estimates at 1,000 tons (50,000 cubic feet) of Teak and Blackwood, on receiving a compensation of Rs. 5,000. It will not pay to work this forest unless a ghaut road is made, which will cost a large sum of money, and there is great doubt whether the timber felled by Mr. Lowry can be removed at a profit without this road. The forest is situated on the direct route to the higher ranges of these beautiful hills, and there can be no doubt that a road will be made at some future time.

76. *Operations.*—437 logs and planks dragged by elephants from depôts above ghaut to head of timber slip.

1,012	do.	do.	carted by departmental carts.
1,063	do.	do.	carted from foot of slip to Mungarah by contractors.

Little or no felling took place, as there is a very large stock of teak on hand.

77. *License System introduced in forests of slopes and foot of Hills.*—The License System has been introduced into the forests of the slopes of the hills in the Pollachy and Oodymallay Cottah taluqs, so that the chain of conservancy is now complete between the Nilgiris and the Pulnies. The collections for the year were made by the Taluq Revenue Officials and were chiefly for firewood and bamboos, and amounted to Rupees 978-4-6. A small establishment is sanctioned for the ensuing year, and it is hoped that the jungle timbers will be utilized.

List of Firewood and Bamboos recovered on seignorage :—

140	bandy	loads	of Timber.
3,024	do.	do.	Firewood.
1,425	do.	do.	Bamboo.
2,267	head	loads	do.
441	do.	do.	Firewood.
203	do.	do.	Charcoal.
45	bullock	loads	Bamboos.

78. *Elephant Establishment.*—There has been a most unusual mortality amongst the elephants of the establishment: three of the females died during the year. One is stated to have died from inflammation of the bowels, one from debility after calving, and the third from worms; the only male on the establishment also died in March, it is stated, from sun-stroke. Two out of the five small calves have also died. When the mortality commenced, the Officiating Conservator applied for sanction for an experienced Elephant Hakeem to be entertained as a Fouzdar, and this was sanctioned (vide G. O. 28th December 1867, No. 453), and he joined the establishment on the 16th of February. There was no suspicion of foul play in any of the deaths, and the stomachs were examined by the Dresser of the establishment. Debility after parturition and over-work may have had much to do with it, and the Deputy Conservator has been cautioned to give the elephants proper rest and not work them in the hot weather.

79. *Elephant Breeding Establishment.*—The subject of a Breeding Establishment is still under the consideration of Government. It is very evident that it is injurious as far as our forest elephants are concerned, and they cannot be spared from work. If a large establishment of Commissariat elephants was formed upon these hills, it might however be very profitably carried out, and the keep of the animals would be far less than in the plains, and the catching of wild elephants might form part of the duties of the establishment.

80. *Forest Fires.*—No timber was lost by the annual fires.

81. *Outstandings.*—The old outstanding advances have been reduced during the year from Rupees 5,542-8-10 to Rupees 4,070-0-10. Parties are still being prosecuted, so that the Deputy Conservator has not yet recommended any sums being written off. A large amount of this however will have eventually to be written off, as many of the contractors have died.

82. *Sales.*—Timber to the value of Rupees 65,264-1-8 was delivered to the Bombay Marine Department, and Rupees 6,039-12-0 to the Bombay Gun Carriage Department, and Rupees 5,575 to the Madras Gun Carriage Department.

Health of Establishment.—Fever has been very prevalent, and five of the establishment have died.

83. *Financial Results.*

Expenditure.	RS.	A.	P.	RS.	A.	P.
Establishment	9,182	2	5			
Contingencies	390	12	1			
Working charges	23,678	4	4			
				33,251	2	10
Receipts.						
Timber supplied to the Bombay Marine Department	38,285	13	4			
Do. Gun Carriage do.	6,039	12	0			
Do. Madras do. do.	5,575	0	4			
Do. Public Works do.	5,665	11	4			
Seighorage, &c.	978	4	6			
				56,544	9	6
Balance in favor of forest				23,293	6	8
Timber in Depôt on 31st March 1867	272,120	14	6			
Do. in do. on 31st March 1868	217,726	5	0			
Deficiency in stock of Timber	54,394	9	6			

84. Chenat Nair and Bolamputty.—*Superintendence.*—These forests have been under the charge of Lieutenant Gosling during the year, and have been worked by Mr. Lloyd. A second Overseer is sanctioned for the ensuing year and an increase to the establishment.

85. *Fuel reserve.*—A large Railway fuel reserve is in the course of formation. The Collector has handed over 742½ acres of Government waste land, and has purchased 246½ acres adjoining it from certain ryots for Rupees 1,280. This locality is close to Wallyar, and being under the influence of the monsoon, the growth of fuel-yielding trees will be rapid; it will only require to be fenced in on the East and West sides, as it is bounded on the South by the Railway, and on the North by the Sholaykarray range of hills. This fencing will be commmenced in June.

86. *Demarcation.*—Demarcation of all the Government tracts of forests in the Coimbatore Belt should be carried out.

87. *Roads.*—The forest roads in the Chenat Nair and Sholaykarray forests require a considerable outlay to make them fit for carting operations.

88. *Operations.*—In the Chenat Nair forests, 69 logs of Rosewood and 13 logs of Junglewood were felled.

29	logs	of Rosewood	floated from the forests to Palghat.
39	do.	of do.	to Luckady.
37	do.	of do.	from Teroor to Poonany.
44	do.	of do.	carted from forests to Perly
32	do.	of do.	do. from forest to Palghat.
105	Rosewood logs	} slipped from Ghaut Jungles by elephants.	
21	Junglewood logs		
105	Rosewood logs floated to Poonany.		

The seignorage in the Chenat Nair amounted Rupees 1,498-12-6. The demand for timber is small, as the Government forests are surrounded by private forests, but these latter are being fast denuded of timber.

In the Sholaykarray forests—

100	logs	of Rosewood	felled.
34	do.	of do.	sent to Madras.
16	do.	of do.	floated to Poonany.
34	do.	of do.	slipped from above Ghaut.

Twenty-nine logs of Teak were supplied to the Bombay Gun Carriage Department, and a small amount of timber to the Coimbatore Jail.

89. *Tract of Forest given up.*—In the Bolamputty forests a small tract of Blackwood forest has been given over to a merchant at Coimbatore, as the Revenue Board admitted his claim, though the Collector would not allow it. The present owner is only the mortgagee, the mortgagor who got the land on putta never attempted to claim the timber, though he asked for permission to fell it on payment of seignorage which the Collector refused. The Forest Department had also to give over some fine blackwood which had been felled by them on this land for the Madras Gun Carriage Department. It may be observed that when these forests were handed over to the Department, the Deputy Conservator was not even informed that this puttah existed, and knew nothing of it until the mortgagee claimed the timber felled by the Department. The late Collector, Mr. Thomas, had felled for Government purposes in the same tract before he handed over the forest—vide Proceedings of the Board of Revenue, No. 534, dated 23rd January 1868, and Government Order No. 498 of 22nd February 1868.

90. *Financial Results.*

Expenditure.	Rs.	A.	P.	Rs.	A	P.
Establishment.....	1,434	0	0			
Contingencies, &c.....	94	0	0			
Working charges.....	3,098	2	1			
Compensation paid for the land purchased on account of Fuel reserve at Wallyar jungles.	1,500	0	0			
				6,126	2	1

Receipts.	RS.	A.	P.	RS.	A.	P.
Timber sold to public	256	3	3			
Do. supplied to the Madras Gun Carriage Department.....	2,797	8	0			
Do. do. to the Bombay do.	7,562	0	0			
Do. do. to D. W. P	319	2	0			
Seignorage collections, &c.....	1,498	12	6			
				12,433	9	9
Balance in favor of forest.....	.....			6,307	7	8
Balance of Timber on hand 31st March 1868 .	6,472	10	0			
Do. do. 31st March 1867 .	7,011	4	0			
Deduct deficiency in stock.....	.....			538	10	0
Financial result for 1867-68.....	.....			5,768	13	8

91. MUDUMALLAIA.—*Superintendence.*—These forests have remained under Colonel Morgan during the year, and were worked by Overseer Iyasawmy Naik, who has given satisfaction.

92. *Operations.*—6,470½ cubic feet of Teak and 9,027½ cubic feet of Vengay were felled and brought to depôt during the year, at a cost of Rupees 1,452-15-5.

9,52¼ square feet of Teak sawn at a cost of Rupees 47-9-11.

The elephants have dragged 17,796½ cubic feet of Teak and Vengay from out of the forest to the road.

24,748½ cubic feet of Teak carted from forest depôt to Teppecaudoo by department carts.

93. *Teak Plantation.*—The trees planted in 1864-65 have made fair growth. The Deputy Conservator complains much of the difficulty of obtaining labor and of the want of a contract law.

94. *Purchase of Plant.*—30½ pairs of bullocks and five carts were purchased for the department during the year.

95. *Vengay.*—The Deputy Conservator anticipates demand for this timber, and some has consequently been felled.

96. *Sales.*—29,205¼ cubic feet of Teak were supplied to the Public Works on the Nilgherries, and 1,413⅜ to the Goodalore Bridge works, the value of which, Rupees 60,456-5-5, was adjusted by receipts. 386 cubic feet of timber was sold to merchants in the forests for Rupees 655-4-6 and 2,679 cubic feet in Ootacamund for Rupees 3,565-9-8.

97. *Health of Establishment.*—This has been better than usual, partly due to a large supply of quinine.

98. *Revenue lessened by the new system of no advances.*—The stoppage of all advances has caused an increase of 30 per cent. in the rates of carriage paid to contractors, and it is doubtful whether the department could have procured contractors at all, except at rates far in excess even of these, unless a cart establishment has been organized departmentally. 4,000 Rupees were expended in the purchase of bullocks. These causes have tended to lessen the profits. The present system of no advances is doubtless more expensive; it is not understood by the native contractors, and many who wish to work are really unable to do it, without an advance to purchase grain, &c. for their cattle, and when all coffee planters and merchants still continue the system of advances, it is not to be expected that labor will come to our department without any advance except at considerably increased rates. On the other hand, the present system is far less troublesome to Executive Officers, and there are no bad debts. With an efficient contract law, however, the bad debts would be very small.

99. *Financial Results.*

Expenditure.	Rs.	A.	P.	Rs.	A.	P.
Establishment	17,238	3	11			
Office contingencies	127	8	0			
Working charges	36,797	2	10			
				54,162	14	9
Receipts.						
Sale of Timber to public	4,220	14	2			
Supply of do. to D. P. W.	60,456	5	5			
Seignorage on Bamboos	7	8	0			
Miscellaneous	229	14	0			
				64,914	9	7
Balance in favor of forests				10,751	10	10
Balance of Timber on 31st March 1868.	186,825	7	0			
Do. of do. on 31st March 1867.	194,775	1	6			
Deficiency in stock				7,949	10	6
Financial results				2,802	0	4

100. Seegur and Suttiamungalum.—*Superintendence.*—These forests have remained under the charge of Colonel Morgan, and have been worked by Overseer Appavoo Moodelly, who has carefully performed his duties.

101. *Operations.*—7,614 Sandalwood trees felled at a cost of Rupees 1,460-11-10.

14,649 roots dug up at a cost of Rupees 1,944-5-6.

10,517 trees sawn and 8,085 maunds of billets prepared and stored in depôt at a cost of Rupees 1,205-6-10.

8,109¼ maunds carried at a cost of Rupees 2,494-11-9. Attention has been paid to conservancy in the sandalwood tracts.

	Rs.	A.	P.
102. *Sales.*—Sandalwood sold to Merchants	27,309	2	0
Sale of Vengay and seignorage at Suttiamungalum	1,528	2	11
Seignorage in Seegur	314	10	0

103. *Health of Establishment.*—Fever has been less severe during this year.

104. *Plantations.*—In the Sandalwood plantation at Tullamallai, 4,710 plants have been put out from the nursery beds. Careful attention to shading and watering is necessary. Rupees 908-9-9 have been expended on the plantation and nurseries during the year.

105. *Financial Results.*

Expenditure.	Rs.	A.	P.	Rs.	A.	P.
Establishment	1,864	0	0			
Office contingencies	22	10	0			
Working charges	8,651	2	0			
				10,537	12	0
Receipts.						
Sale of Sandalwood to public	27,309	2	0			
Seignorage	1,842	12	11			
				29,151	14	11
Balance in favor of forest				18,614	2	11
Balance of Timber in deposit on 31st March 1868	31,068	13	6			
Do. of do. on 31st March 1867	37,173	3	5			
Deficiency in stock				6,104	5	11
Result for the year.....surplus				12,509	13	0

106. BHOWANI.—*Superintendence.*—These forests have remained under Colonel Morgan and have been worked by Overseer Grant, who has performed his duties diligently.

107. *Operations.*—3,529½ maunds of Sandalwood have been felled and stored in depôt.

Conservancy of the Sandalwood tracts has received attention.

The sale of timber on license has increased.

108. *Sales.*—Sandalwood to the value of Rupees 13,500 has been sold. The License collections amount to Rupees 2,395-6-6.

109. *Plantations.*—A plantation for Railway fuel on the banks of the Cauvery is in contemplation, and will be commenced if the rates the Railway will give per ton for fuel authorize it. No land appears to be available near Erode, but the wood can be conveyed cheaply by water.

110. *Health of Establishment.*—All the establishment have suffered more or less from jungle-fever.

111. *Financial Results.*

Expenditure.	RS.	A.	P.	RS.	A.	P.
Establishment	2,357	7	2			
Office contingencies	14	3	0			
Working charges	4,304	11	10			
				6,676	6	0
Receipts.						
Sale of Sandalwood	13,500	0	0			
Seignorage	2,395	6	6			
				15,895	6	6
Balance in favor of Government	.....			9,219	0	6
Balance of Timber in Depôt on 31st March 1868	1,354	10	6			
Do. of do. do. on 31st March 1867	1,453	1	0			
Deficiency in stock	.....			98	6	6
Results for the year	.....			9,120	10	0

112. COLLEGAL.—*Superintendence.*—These forests have remained under Colonel Morgan, and have been worked by Overseer Spring, who is reported not physically fit for jungle work.

113. *Operations.*—4,392 maunds of Sandalwood have been felled and stored in Depôt.

The Overseer does not visit the forests, and the Deputy Conservator reports that conservancy is in consequence not properly attended to.

114. *Sales.*—Rupees 17,426-10-0 were realized by the sale of Sandalwood to merchants. Rupees 419-4-0 only were realized as seignorage, which is not satisfactory.

115. *Plantations.*—A small Sandalwood plantation has been commenced.

116. *Health of Establishment.*—Fever has been prevalent.

117. *Financial Results.*

Expenditure.	RS.	A.	P.	RS.	A.	P.
Establishment	2,397	2	7			
Contingencies	3	4	2			
Working charges	4,702	10	9			
				7,103	1	6

Receipts.	RS.	A.	P.	RS.	A.	P.
Sale of Sandalwood	17,426	10	0			
Seignorage	419	4	0			
				17,845	14	0
Balance in favor of Government				10,742	12	6
Balance of Timber on hand, 31st March 1868.	2,610	15	0			
Do. of do. 31st March 1867.	3,644	12	0			
Deficiency in stock				1,033	13	0
Results for the year				9,708	15	6

118. NILGHERY SHOLAS.—*Superintendence.*—The sholas have remained under the charge of Colonel Morgan during the year, and the conservancy has been carefully attended to by Overseers Newman and Taylor.

119. *Boundaries.*—The boundaries of the Government sholas and private estates are being laid down.

120. *Plantation.*—In the Eucalyptus timber plantation 16,603 plants of E. globulus have been put out; 5,305 have been mossed ready for planting out.

In the Governor's Shola 1,600 plants of Acacia Melanoxylon and Dealbata and Eucalyptus globulus have been planted out.

121. *Devi Shola.*—The purchaser of the Devi Shola is not fulfilling his contract. Out of the 5,000 loads to be stacked in two years, only 900 have been stacked, and fifteen months have elapsed. The subject has been brought several times to the notice of the Collector, who was appointed arbiter in the agreement, and it has lately been laid before Government.

122. *Clandestine felling.*—Clandestine felling for firewood is very prevalent and very difficult to put a stop to.

123. A Second Overseer required. The Deputy Conservator reports that a second Overseer is much required at Ootacamund, and the subject is now under the consideration of Government. The revenue from the sholas does not cover the expenditure.

124. *Sales, &c.*—Seignorage collections have realized Rupees 2,551-5-3. 3,529 bandy loads of firewood were supplied to the Lawrence Asylum Works, and the value, namely, Rupees 1,293-4-0 was adjusted by vouchers.

125. *Financial Results.*

Expenditure.	RS.	A.	P.	RS.	A.	P.
Establishment	2,864	10	0			
Contingencies	53	8	0			
Working charges	2,499	3	7			
				5,417	5	7
Receipts.						
Wood sold to the public	2,551	5	3			
Do. supplied to D. P. W.	2,193	4	0			
				4,744	9	3
Balance against the Sholas				672	12	4

126. AUSTRALIAN PLANTATIONS.—*Superintendence.*—These plantations have been worked by Overseer Newman, under Colonel Morgan.

127. *Operations.*—The number of trees planted out during the year in the plantation is as follows:—

Acacia Melanoxylon	10,000
Do. Dealbata	8,500

Plantation.—20,000 Acacias have been planted out into nursery beds, and 12,000 into bamboo pots, ready for transplanting.

128. *Sales.*—Wood to the value of Rupees 933-14-0 has been supplied to the public and the D. P. W. from the old portion of the plantation.

129. *Future prospects.*—The older plantations look very well, and it is anticipated that they will more than pay their expenses in a few years. Dr. Cleghorn felled a small measured acre, and he and Colonel Morgan estimated each acre to contain 300 bandy loads and to be worth 300 Rupees.

130. *Financial Results.*

	RS.	A.	P.	RS.	A.	P.
Expenditure.						
Establishment.....	169	0	6			
Working charges	1,587	12	0			
				1,756	12	6
Receipts.						
Sale of Timber to public.....	916	14	0			
Do. of do. to D. P. W	17	0	0			
				933	14	0
Balance against the Plantation.....	.....			822	14	6

131. SALEM.—*Superintendence.*—This district has remained under Lieutenant Walker during the year. He was promoted to Second Class Deputy on the 15th of May last—vide G. O. No. 648, dated 18th March 1867. It is divided into three distinct ranges, namely, Salem, Tripatore, and Denkenacotta.

132. SALEM RANGE.—*Forests how worked.*—The Voucher and License System is still retained in this range. A Timber Depôt is being formed at Salem with a view to eventually supplying all trade requirements, retaining the License System for local wants and the felling of the inferior description of timber.

133. *Explorations.*—The Kollay Mallays and the Colaroys, two ranges of hill forest in this range, were explored by the Deputy Conservator during the year. His report was recorded in G. O. No. 2977, dated 14th December 1867.

134. *Conservancy.*—The Sandalwood trees on the Kollay Mallays have received much attention and have been cleared from creeper and noxious undergrowth.

135. *Operations.*—110 maunds and 19 lbs. of Sandalwood felled, prepared, and stored in depôt.

523 cubic feet of timber felled and brought to depôt.

133½ maunds of Sandalwood billets and roots, and 19 lbs. saw-dust sold for Rs. 382-8-0.

298 cubic feet of junglewood sold for Rupees 250.

Timber, &c. removed on Seignorage—

836	bandy	loads	of Timber.
6,217½	do.	do.	of Firewood.
3,093	do.	do.	of Bamboos.
455	do.	do.	of Bark.
2,342	do.	do.	of Charcoal.
754	head	do.	of Timber.
24,297	do.	do.	of Bamboos, Charcoal, &c.

Timber, &c. supplied free to Ryots—

164½ bandy loads of Timber.
113¾ do. do. of Bamboos.

136. *Confiscations.*—Confiscations amount to Rupees 826-12-11, exclusive of the amount paid to informers. The Deputy Conservator reports that clandestine felling is very common, but on the decrease. Convictions, and punishment have been numerous when cases have been prosecuted under the Penal Code, but there is still a disinclination to treat such breaches of law as ordinary theft or mischief.

137. *Plantations.*—The sowing of Babool (Acacia Arabica) seed broadcast on 100 acres of well ploughed land was tried; the result has not been favorable, though at first a large portion of the seed germinated.

Red Sanders, Adenanthera, Babool, and other seeds have been put down in gaps in the reserved fuel tracts.

In the Shevaroy Hills plantation 3,650 Toon (Cedrela Toona) trees, 200 Teak and 40 Pinus Maritima trees have been planted out; the Toon trees are doing very well, it is doubtful whether the Teak or the Sea coast pine will answer.

138. *Fuel Reserves.*—Three tracts have been fenced in as Railway fuel reserves in this range.

139. *Damage in Reserves from trespass.*—Much damage from simple trespass occurs in our plantations and fenced-in reserves, and it is very doubtful whether simple trespass can be punished under the Penal Code, and yet a whole plantation or reserve might be burnt down by a native entering to cook his rice. This subject is alluded to further on in this report.

140. *Health of Establishment.*—This has been very good.

141. *Revenue and Expenditure.*—The expenditure for establishment, including a third of the Deputy Canservator's salary and working charges of this range, is Rupees 7,727-14-10, the receipts are Rupees 23,497-12-10, shewing a balance in favor of the range of Rupees 15,769-14-0, with an increased stock of timber amounting to Rupees 87-5-0.

142. TRIPATORE RANGE.—*Overseer.*—Overseer Hodgson has worked this range during the year; his ignorance of the language and the system of accounts has been found such a drawback, that he has been transferred to Nellumbore, and a Mr. Franklin takes his place.

143. *Forests how worked.*—The License System has been nearly abolished in this range, and the forests are chiefly worked departmentally. Our depôts at present are not large, as much timber is supplied to the market from the Cotapully Jagheer.

144. *Explorations.*—The Javadi and Yellagiri Hills have been carefully explored by the Deputy Conservator during the year, and his report was published—(vide G. O. No. 482 of the 20th February 1868). A Teak reserve was demarcated on the Yellagiris, and boundary stones were put up; a chart shewing this was also published with the report.

145. *Operations.*—551 maunds and 26 lbs. of Sandalwood billets, and 106 maunds and 14 lbs. of roots, were prepared and stored in depôt at Tripatore.

1,319 cubic feet of timber felled and stored in depôt, and a large amount felled, still remains in the forest.

1,286 maunds and 20 lbs. of Sandalwood billets and roots were sold for Rs. 4,950-7-5.

389⅜ cubic feet of timber were sold.

Timber, &c. removed on Seignorage.

49	bandy loads	of Timber.
2,404	do.	of Firewood.
1,209	do.	of Bamboos.
1,339	do.	of Bark.
430	do.	of Charcoal.
1,566	head loads	of Timber.
27,304½	do.	of Bamboos, &c.

Timber supplied free to Ryots.

99$\frac{1}{10}$	bandy loads	of Timber.
1,076	do.	of Bamboos.

146. *Conservancy.*—Much attention was paid to conservancy in the Sandalwood tracts.

147. *Railway Fuel Reserves.*—Two reserves are in the course of formation for Railway fuel purposes.

148. *Confiscations.*—Confiscations amount to Rupees 864-10-11, of which Rupees 614-10-11 were credited to Government, and Rupees 226-5-3 were paid to informers.

Convictions have not generally been obtained when parties have been prosecuted; in many cases therefore the department has not attempted to do more than confiscate the timber.

149. *Smuggling very prevalent.*—Smuggling of timber is reported to be very prevalent; this is mainly caused by a tract of forest between the North Arcot and Salem establishments being still under the Revenue authorities, and the Collector of North Arcot has been referred to on this subject.

150. *Health of Establishment.*—This has been good, only a few cases of fever on the Javadis having been reported.

151. *Revenue and Expenditure.*—The expenditure for establishment, including a third of the Deputy Conservator's pay, and working charges, amounts to Rupees 7,103-7-3, and the receipts to Rupees 15,323-6-8, shewing a balance in favor of the range of Rupees 8,219-15-5, with a decrease in stock of timber of Rupees 790-2-3.

152. Denkenacottah Range.—*Overseer.*—This range has been under Overseer Mahomed Ali, and the Deputy Conservator reports very highly of him.

153. *Forests how worked.*—This range is now almost entirely worked departmentally, the seignorage collections being only for inferior timbers, bamboos, firewood, &c.

154. *Operations.*—681½ maunds of Sandalwood billets, 683¼ maunds of roots, and 71 maunds and 18 lbs. of chips were prepared and stored in depôt.

7,367 cubic feet of timber, chiefly Acha (Hardwickia) felled and carted to depôt.
1,340 cubic feet stored in forest.
1,837 maunds of Sandalwood billets and roots sold for Rupees 6,737-7-9.
4872$\frac{1}{8}$ cubic feet of timber sold for Rupees 4,150-12-11.
289$\frac{7}{12}$ cubic feet of timber supplied to Government departments.

Timber, &c. removed on Seignorage.

56	bandy loads	of Timber.
536	do.	of Firewood.
1,053	do.	of Bamboos.
558	do.	of Bark.
445	do.	of Charcoal.
674	head loads	of Timber.
12,857	do.	of Bamboos.
889	do.	of Charcoal, &c.

Timber supplied free to Ryots.

958½ bandy loads of Bamboos.

227$\frac{3}{10}$ do. of Timber.

155. *Conservancy.*—Much attention has been paid to conservancy proper throughout the tracts of this range.

156. *Roads.* The forest road from Denkenacottah to Auchitty has been finished as far as Condacottah (eight miles.)

Two roads are under construction from Pennagara to the Acha forests, and the banks of the Cauvery.

157. *Elephants required.*—Elephants will be required for the Acha forests; they are at present very difficult to obtain even at exhorbitant rates.

158. *Confiscations.*—Confiscations amounted to Rupees 25-2-6, exclusive of the amount paid to in-formers; there is little attempt at smuggling in this range.

159. *Health of Establishment.*—Fever of a violent type was prevalent in October, November, and December, and all the establishment suffered severely.

160. *Revenue and Expenditure.*—The expenditure for establishment, including a third of the Deputy Conservator's pay and for the working charges, was Rupees 21,847-9-10. Of this a large sum is for road making and the formation of a timber yard. The receipts are Rupees 14,745-7-6, shewing a balance against the forest of Rupees 7,102-2-4, and an increase in stock of timber of Rupees 1,188-4-2.

161. *Demarcation of Salem Forests.*—A temporary establishment, at a monthly cost of 100 Rupees sanctioned to carry out the demarcation of the forests of this district. It will be commenced in June.—Vide G. O. No. 414, dated 13th February 1868.

162. *Railway fuel.*—The two ranges of Salem and Tripatore have supplied 9,023 tons of firewood to the Locomotive Department, at a seignorage of Rupees 7,679-12-3, all the cost of felling and carting having been paid by the Railway.

163. *Transfer of Establishment to South Arcot.*—The transfer on the 1st November of an establishment, costing Rupees 45 per mensem, from the Salem Range to that of South Arcot, was sanctioned in the G. O. No. 2515 of 25th October 1867.

164. *Revenue of the District.*—The receipts amount to Rupees 53,566-11-0, and the expenditure to Rupees 36,678-15-4 against Rupees 57,518-13-4, and Rupees 19,516-12-7 for last year. In the expenditure Rupees 11,438-5-8 is for the formation of roads, Rupees 847-3-6 for forest reserves, and Rupees 1,656-4-7 for a timber yard, and Rupees 1,783-4-4 has been expended on plantations.

165. *Financial Results.*

Expenditure.	RS.	A.	P.	RS.	A.	P.
Establishment	12,991	5	8			
Working charges	23,687	9	8			
				36,678	15	4
Receipts.						
Sale of Timber, &c	17,110	3	5			
Confiscations	1,466	0	11			
Seignorage, &c	27,542	6	5			
Timber supplied to Government	269	1	6			
Forest products	7,178	14	9			
				53,566	11	0

	Rs.	A.	P.	Rs.	A.	P.
Balance in favor of forests.....	.....			16,887	11	8
Timber in Depôt on 31st March 1868	9,241	12	5			
Do. in do. 31st „ 1867	8,756	5	6			
Add surplus stock.....	.....			485	6	11
Financial result for 1867-68...	.....			17,373	2	7

166. South Canara.—*Superintendence.*—These forests have remained under the charge of Mr. Cadell, during the year. He was promoted to Second Class Assistant on the 21st January last—vide G. O. No. 159, dated 21st January 1868.

167. *Operations.*—As there was a sufficient stock of timber in store, little or no timber was felled during the year, except to meet certain requirements of Government departments.

Timber felled, 611 logs and 19 boats.
Timber floated to coast depôts, 297 logs and 30 boats.
Timber supplied to D. P. W., 1,171 candies.
Timber sold by auction, 71 candies at 6 Rupees per candy, and 2 boats.

168. *Plantations.*—No new planting took place at the Teak plantation at Parapa, but vacancies were filled up. The Teak trees have made good progress.

169. *Health of Establishment.*—This has been good, fever having been less prevalent than usual.

170. *Financial Results.*

Expenditure.	Rs.	A.	P.	Rs.	A.	P.
Establishment.....	7,926	2	3			
Working charges	9,781	11	10			
				17,707	14	1
Receipts.						
Timber supplied to D. P. W...	10,193	8	0			
Sale of Timber in Depôts, &c.....	9,091	0	5			
Do. of do. in jungle, and seignorage....	10,867	8	8			
Forest produce.....	894	7	2			
Seignorage on Firewood for Sandalwood oil stills.....	4,824	10	9			
Catechu seignorage.....	4,172	0	0			
				40,043	3	0
Balance in favor of forests...	.....			22,335	4	11

171. Wynaad.—*Superintendence.*—These forests remained under Lieutenant Fullerton for the year. As the operations in these forests will be almost closed for a year or two, he is about to be transferred to the Madura and Tinnevelly ranges, and Mr. Turnbull is to have charge of this range, on a salary of Rupees 100+30, with a special allowance of Rupees 50.

172. *Operations.*—The amount of timber felled was 17,560 cubic feet, namely, 13,193½ of Teak, and 4,366½ of Vengay and Mutti. 13,666 cubic feet were carted to depôts.

173. *Disputed boundary between Mysore.*—A small tract of forest, west of the Shegabetta tree has long been in dispute between Wynaad and Mysore. This was satisfactorily settled lately—(vide G. O. No. 1129, dated 27th April 1868, and G. O. No. 1278, dated 9th May 1868.)

174. *Demarcation.*—The demarcation of these forests was completed during the year, with the exception of two small portions where there are disputed titles; these will be easily settled

by the Collector. Boundary stones have been put up. A forest chart and a report has been carefully drawn up by the Deputy Conservator, and these have been forwarded separately to Government.

175. *Health of Establishment.*—Fever has been less prevalent than usual amongst the establishment, but some of the contractors have died of fever.

176. *Financial Results.*

Expenditure.	RS.	A.	P.	RS.	A.	P.
Establishment and contingencies	9,442	15	1			
Establishment for demarcation.	646	8	5			
Working charges.....	7,087	10	5			
				17,177	1	11
Receipts.						
Sale of Timber.....	.....			15,518	2	7
Balance against the forest.....	.....			1,658	15	4
Value of Timber on hand on 31st March 1867...	46,368	8	3			
Felled during the year.....	17,129	7	5			
	63,497	15	8			
Deduct Timber sold to Merchants.	15,518	2	7			
Timber supplied to D. P. W.....	1,634	4	8			
Loss in market value and wastage.....	1,923	4	10			
Loss by fire.....	45	0	0			
	19,120	12	1			
Value of Timber on hand on 31st March 1868, (cubic feet 77,687).....	44,377	3	7			
Deficiency in stock	.....			1,991	4	8
Financial result for 1867-68.....Deficit...	.....			3,650	4	0

177. NELLUMBUR.—*Superintendence.*—These Teak plantations have remained under the charge of Mr. Ferguson during the year.

178. *Addition to Establishment.*—The employment of a Second Class Overseer, and a revision of the establishment at an additional cost of Rupees 123 per mensem, were sanctioned in G. O. dated 25th of October 1867, No. 2515, and 5th of November 1867, No. 2618.

179. *Operations.*—105 acres were planted with 105,000 teak seedlings.
2,500 acres of old plantations were weeded.
692 acres were pruned.
400 acres of Loranthus parasite removed.
130 acres, site for fresh plantation felled and burned.
409 logs floated, from forests to Calicut, by departmental agency.
9,600 saplings thinned out of old plantations.

No felling of timber from the natural forests has taken place, as there is a sufficient stock in depôt.

180. *Sales.*—538 saplings were sold and realized a sum of Rupees 502-5-0, and timber to the value of Rupees 2,559-2-3 was disposed of out of the depôt.

181. *Cause of deficit against the plantation.*—There is a large deficit against the plantations for the year, caused by the Assistant Conservator not having been able to sell the saplings and timber, owing, it is stated, to the depression of the Bombay market, and the scarcity of tonnage, (almost all the transport available in Bombay having been taken up for the Abyssinian Expedition.)

182. *Health of Establishment.*—Fever has been very severe, and the establishment is generally quite disorganized by it; the Assistant Conservator was obliged to take leave for three months.

183. *Financial Results.*

Expenditure.	Rs.	A.	P.	Rs.	A.	P.
Establishment	5,251	9	10			
Working charges	8,966	2	10			
Office contingencies	68	8	7			
				14,286	5	3
Receipts.						
Sale of Timber and saplings	.....			3,096	15	3
Balance against the plantation	.....			11,189	6	0
Balance of Timber in Depôt on 31st March 1867	43,476	15	8			
Balance of do. do. on 31st March 1868	40,106	15	5			
Deficiency in stock of Timber and saplings	.....			3,370	0	3
Financial result for 1867-68.....Deficit	.....			14,559	6	3

184. *Forest Act.*—The Board of Revenue object to the introduction of the Forest Act into the Madras Presidency. Most cases of theft, &c., during the year have been punished under the Penal Code, and if all the Civil authorities clearly understood that all forests under the department were the property of Government, and that theft and mischief was punishable, the Code would appear to be sufficient, and in some cases even preferable to the Act, but it is doubtful how far simple trespass can be punished under the Code; yet much of the object in forming fuel reserves, &c. will be defeated, if trespass cannot be put a stop to. The fact of a man entering a fuel reserve to cook his rice in the dry weather, might occasion the destruction of the whole or a portion of it, so that strict rules on this subject are urgently required.

185. *Contract Law.*—Executive officers continue to complain of the want of a proper Contract Law.

186. *System of No Advances.*—The stoppage of all advances to cart contractors working in Government forests has caused a considerable rise in the rate for cart hire. This must be the case when Coffee planters and all private traders continue to give large advances; in some cases it makes it almost impossible to procure contractors, and departmental establishments are springing up.

187. *Herbarium.*—The Officiating Conservator has collected largely for the Madras Herbarium during his tours.

188. *Botanical drawings.*—Appendix A. is a list of new and rare plants drawn in the Office of the Conservator during the year.

189. *New species of Diospyros from Tinnevelly.*—Drawings and descriptions of the male and female tree of a new species of Diospyros (D. Calycina, Bedd.) called Vellay Tovaray by the natives, yielding a valuable timber in the Tinnevelly District, are given in Appendix B.

190. *The Coffee Borer, &c.*—Appendix C. is a drawing, and some account of the habits, &c. of the White Borer, which has lately caused so much havoc in Coffee plantations. The beetle appears to have received the name of Xylotrechus quadripes in the British Museum, and is nearly allied to the genus Clytus, a species of which is so destructive to the American sugar-maple, and of which several representations are found in Southern India and Ceylon; the notes upon the habits, &c. of the insect are by Dr. Bidie, the Commissioner for reporting on the ravages of this insect. The attention of Forest Officers has been directed to all insects destructive to timber and trees. Several insects in the larva state, very similar to the Coffee Borer here figured, have been detected in different trees, but it has not yet been ascertained that any have produced the same beetle.

191. *Gums and Resins.*—The Officiating Conservator has prepared large samples of all the more valuable resins, &c., procurable in the forests of the Presidency, and they are nearly ready for transmission to England. Mr. Broughton, the Analytical Chemist and Quinologist, is now analysing small quantities of each, and has promised a report upon the subject.

192. *Expenditure and Receipts for the year.*—The expenditure for the year has been Rupees 272,840, and the receipts Rupees 424,184, against Rupees 217,149 and Rupees 338,607 for 1866-67.

193. *Financial Result for the year.*

	RS.	A.	P.
Net profit for the year	151,344	0	0
Deduct difference in value of Timber in hand on 31st March 1868, from the amount on 31st March 1867	83,720	0	0
Financial result for 1867-68	67,624	0	0

I have the honor to be,

Sir,

Your most obedient servant,

R. H. BEDDOME, Major,

Officiating Conservator of Forests.

APPENDIX A.

List of new and rare Plants drawn in the Office of Conservator of Forests in 1867-68.

1. RANUNCULACEÆ.

Thalictrum Dalzelü, Hook.....Bombay Presy.

2. ANONACEÆ.

Goniothalamus Thwaitesii, H^k. fil. et T..... .....Tinnevelly.
Do. Sp. nov.?.... ..... do.
Miliusa, Sp. nov.?... ..... do.
Unona Lawü, H^k. fil. et T.....Wynaad.
Cyathocalyx Zeylanicus Champ.. do.

3. DIPTEROCARPEÆ.

Hopea, Sp.? (called Kong). .....Tinnevelly.

4. TERNSTRÆMIACEÆ.

Pæciloneuron pauciflorum (Bedd).Tinnevelly.

5. MELIACEÆ.

Milnea, Sp..... ....South Canara.

6. BALSAMINACEÆ.

Impatiens Travancorica, (Bedd). .Travancore.

6. LEGUMINOSÆ.

Dalbergia, Sp.....Tinnevelly.
Derris, Sp..... ....South Canara.
Desmodium.....Tinnevelly.

7. MEMECYLEÆ.

Memecylon, Sp. nov ?.....Tinnevelly.

8. MYRTACEÆ.

Eugenia Rottleriana.... .....Travancore.
Do. Calcadensis, (Bedd).....Calcad Hills.
Do. Sp. nov ?..... .....Wynaad Swamps.

9. ARALIACEÆ.

Panax, Sp..... ....Wynaad.

10. RUBIACEÆ.

Hedyotis purpurea, (Bedd).....Tinnevelly.
Do. lentiginosa (do.)..... do.
Do. albonerva (do.)..... do.
Do. viscida (do.)..... do.
Do. Sp. nov ? near obscura. do.
Do. pentanervia, Thw.....Ceylon.
Lasianthus, Sp. nov... ....Tinnevelly.
Do. Sp. nov..... ... ...Travancore.
Acranthera grandiflora, (Bedd)... do.

11. RHIZOPHORACEÆ.

Blepharistemma Corymbosa, (Wall).....Coorg.

12. CONNARACEA.

Connarus, Sp... .....South Canara.

13. EBENACEÆ.

Diospyros oligandra, (Bedd), male only..... ....South Canara.
Do. calycina (do.) .....Tinnevelly.
Do. Thwaitesii (do.) male and female..... ....Ceylon.
Do. hirsuta (do.) do. do.
Do. quœsita, Thw. do. do.
Diospyros attenuata, Thw., male and female..... ...Ceylon.
Do. Gardneri, do. female. do.
Do. insignis, do. do. Anamallays.
Do. toposia, Ham., male and female.....
Do. nigricans, Dalz ? male and female.....Bombay Presy.

14. MYRSINACEÆ.

Ardisia amplexicaulis, (Bedd)... Tinnevelly.

15. APOCYNACEÆ.

Chilocarpus Malabaricus, (Bedd).South Canara.
Anodendron paniculatum ..... do.

16. LOGANACEÆ.

Strychnos bichirrosa ?... ....Malabar.
Do. cinnamonifolia, (Thw).South Canara.
Do. Sp. nov ?.....Travancore.

17. GENTIANACEÆ.

Exacum Travancoricum, (Bedd).Travancore Hills.
Do. atropurpureum, (do.). do.

18. LABIATÆ.

Leucas collina, Dalz..... .....Bombay Presy.
Anisochilus, Sp. nov ?..... .....Tinnevelly.

19. ACANTHACEÆ.

Asystasia, Sp..... .....Tinnevelly.
Phlogacanthus albiflorus, (Bedd). do.
Do. grandis, (do.). do.
Gymnostachyum latifolium, Dalz.Coorg.
Ebermayera spathulata, (Bedd).. do.

20. LAURACEÆ.

Cryptocarya, Sp. nov.....South Canara.
Cinnamomum, do. .....Tinnevelly.
Do. do. .....S. Canara beds of rivers.
Cylicodaphne, do. .....Coorg.
Beilschmiedia fagifolia, (Nees) ...South Canara.

21. EUPHORBIACEÆ.

Adenochlæna ? calycina, (Bedd)..Tinnevelly.
Trigonostemon nemorale ? (Thw). do.
Pyrenacantha volubilis, (Hook). do. (Olacaceæ ?)

22. PROTEACEÆ.

Helicia, Sp. nov... .....Tinnevelly Hills.

23. BEGONIACEÆ.

Begonia floccifera, (Bedd)..... ...Tinnevelly Hills.

24. SAMYDACEÆ.

Casearia, Sp.....Wynaad.

25. MYRISTICACEÆ.

Myristica, Corticosa ? Hook.....Tinnevelly.

26. ZINGIBERACEÆ.

Alpinia, Sp.....Wynaad.

APPENDIX B.

Description and plate of Diospyros calycina (a new timber tree, from the Tinnevelly forests.)

Diospyros calycina.—A good sized tree, Dicœcious, every where glabrous, leaves dark shining green, narrow lanceolate, tapering at both ends, 3-3½ inches long, ½ to nearly 1 inch broad, shortly peteolate—Masc : cymes 3-9 flowered, calyx 4-toothed corol urceolate very gibbous at the base, 4-lobed at the apex, yellow, stamens 6 or 8 double ones, with the 12 or 16 anthers surrounding a rudimentary ovary, filaments slightly hairy. Fl: fœm. Solitary, large, calyx of 4 large cordate imbricated segments which enlarge with the fruit, corol urceolate gibbous 4-lobed at the apex, stamens none, stypes 4, ovary 4, celled, fruit globose downy with hair-like scales, *Called Vellay Toveray in Tinnevelly—yields a valuable light colored wood.*

Pl. I., Male tree.
Pl. II., Female tree.

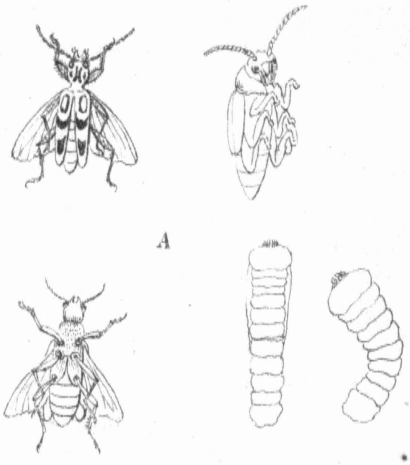
APPENDIX C.

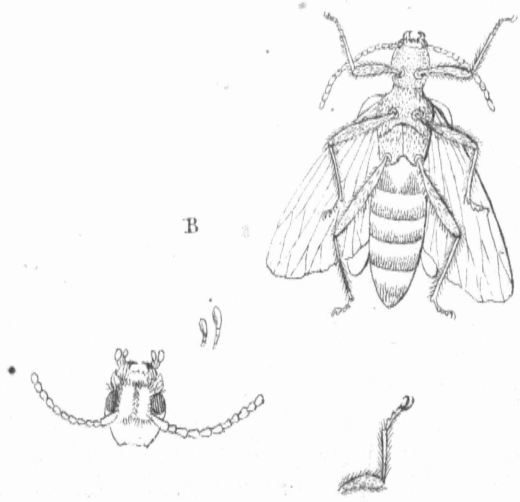
— *Drawing of the Coffee Borer.*

WHITE COFFEE BORER.

Xylotrechus quadripes. (Chevrolat.)
Syn. Clytus Coffeophagus.
,, Macaensis.

(Notes by Dr. Bidie.)—This insect belongs to the family Cerambycidæ of the Coleoptera, The beetle is pretty, being of rather an elegant form, and marked with beautiful colours. The female is distinguished from the male by her size, being about §th of an inch in length, while the male is somewhat smaller. The head is small and depressed and furnished with tapering antennæ, brilliant lunate eyes and powerful jaws. The prothoran is roundish, covered with greyish hairs, and marked by one large central black spot, and two lateral smaller ones. The elytra are broadest at their base, tapering black, and marked with angular greenish, or greenish-yellow bands, which form three figures like an inverted V. The 4 posterior femoræ are of a reddish colour, and afford excellent specific character. The beetle is not often seen at large, but may sometimes be met with on the the stem of the coffee, and has been caught in considerable numbers on the windows of Estate Bungalows. It is active in its movements and seems to like the bright sunshine. The female deposits her eggs in small clusters in cracks of the bark, and when the larva is hatched, it burrows below the inner bark until it gets strong and then works its way into the wood, leaving no trace of its presence, save at times a little ridge on the bark. The LARVA is at first short and filiform, but when full grown as thick as a crow's quill and from ⅔ths to 1 inch in length. It is broadest at the head, of a fleshy consistence, *pale* yellow or whitish colour, and without feet. The head is scaly and furnished with powerful horny jaws, with which it forms a tunnel in the tree, working actively and incessantly. With these formidable members it reduces the wood to a fine saw-dust-like powder, which, having passed through its body is compacted in the tunnel behind it. The larva spends the whole period of its existence in the interior of the stem, and on reaching maturity prepares a chamber immediately under or near the bark, so as to secure the escape of the imago in which it passes into the pupa state and shortly after the imago makes its appearance and cuts its way out. The insect passes through all the stages of its existence in about one year. It does not as a rule attack perfectly healthy trees and the chief reason for its having appeared in such numbers of late years was doubtless a general want of vigour in or sickly condition of the coffee trees, produced by severe droughts, and exhaustion of soil. The dry seasons would also prove favorable to the multiplication of the insect, and the extensive destruction of forest on coffee estates may have deprived it of the trees in which it used to exist and so caused it to take up its abode in the exotic coffee. The Borer has been observed for from 20 to 30 years back on coffee estates in





The Coffee Borer. Xylotrechus quadripes.

Govindoo. del. GANTZ BROTHERS. ADELPHI PRESS. Dumphy Lith.

BENGAL SECRETARIAT

Southern India, but until lately not in such numbers as to excite alarm. About 8 years ago it destroyed in one season 60,000 plants on an estate in Nuggur, and since then it has increased rapidly and done a great deal of damage in all the Coffee districts. It attacks trees at all ages, but while old ones with considerable thickness of stem often recover, plants under three years almost invariably die. The signs of Borer being in a tree are drooping of the younger leaves, and ultimately a yellow colour of the entire foliage. In advanced stages the leaves drop off, and if the stem be now seized and bent gently, it will almost invariably break across, and on looking at the fractured surface the cause of the fragility will at once be discovered. Such trees are often completely riddled with tunnels, and if carefully split open, as many as 10 or 15 specimens of the insect may be found ; some in the larva, some in the pupa and some in the beetle stage. Various means have been proposed for the eradication of the pest, but the best preventives are doubtless careful cultivation, manuring and shade. The insect has been called the *White Coffee Borer* to distinguish it from the *Red Borer*, which is the larva of a moth, a species of Zeuzera and whose ravages are confined to the upper branches.

Fig. A.—Larva pupa and imago life-size.

Fig. B.—Magnified drawings of the imago.

APPENDIX D.*

CAMP OOTACAMUND,
18th August 1867.

From

CAPTAIN R. H. BEDDOME,
Deputy Conservator of Forests.

To

H. CLEGHORN, ESQ.,
Conservator of Forests, Madras.

SIR,—I have the honor to forward my report upon the Tinnevelly Range.

2. *Forests north of Courtallum.*—On the 3rd of July I crossed over from the Madura District by the Nallytannypara Pass near Waisanad, and descended into the Tinnevelly District through the Wartrap forests. From Wartrap I proceeded to Rajahpolliam, and inspected the hill forests of that talook ; there is much small coppice teak at the base of these mountains and the lower slopes, and the same is to be met with more or less down the whole range ; the largest and finest tract being at Calcad, and this will be separately alluded to below ; it has been cut over year by year by the ryots, and used for all agricultural purposes, &c., but when conservancy was introduced two years ago, all felling of teak was put a stop to, and the young trees now make some show ; they are nearly all coppice, and as they are much damaged by cattle and fire, the growth is very poor. The tree grows also on the mountain slopes to an elevation of about a thousand feet, but it is very difficult to find a good sized tree of fair growth ; the girth is often considerable, but there is no length of boll, and the tree is generally much stunted ; higher up on the mountains, where all other trees are met with of fine growth, the teak quite disappears, and there is not a single tree even to be found. Cultivation is gradually coming up to the very base of the hills, and I am not of opinion that this coppice teak at the foot is of value enough to be allowed to stand in the way of permanent cultivation ; some few tracts might perhaps be reserved, and the one at Calcad should certainly be selected for this purpose, but of this I shall report fully further on.

Teak.

3. From Rajahpolliam I proceeded to Shevagherry, and as the Collector of the district, Mr. Puckle, was expected here, I waited for him and took the opportunity of visiting the hill forests of the Shevagherry Zemindary. The ryots of this Zemindary sent in a petition, stating that the Zemindar did not allow them to cut timber free for agricultural purposes, but that all

* Recorded in G. O. dated 6th January 1868, No. 29.

timber was taxed, and requesting that the forests of their Zemindary might be taken over by Government, and that they might be allowed the same privileges as ryots living in Sircar villages; this petition I handed over to the Collector. Care must be taken that the ryots in this and other Zemindaries do not enter our forests, as it cannot be the intention of Government that the inhabitants of Zemindary tracts, rich in forests, should be allowed timber free from the Government forests outside their Zemindaries. I spent a day with the Collector, and we discussed forest matters. He recommended a site near Courtallum for a teak plantation, in the event of our undertaking one. If an Overseer is put in sole charge of this range, I would recommend that a teak nursery and small experimental plantation should be formed. I would not advise operations on a large scale, or any great expenditure, as the teak is decidedly of inferior growth on this eastern side of the chain of ghauts, and *the market would be very distant.*

4. From Shevagherry I proceeded to Vasúdevanallur, and spent two days up in these hill forests, which are about the most valuable north of Courtallum.

5. From Vasúdevanalur I proceeded to Kuddenelloor, where I met the Sub-Collector, Mr. Pennington, in camp. The forests, south of Courtallum, have lately been under him, and he proposed to accompany me over some of them, and returned with me to Courtallum.

6. Mr. Turnbull, the Forest Overseer, accompanied me throughout my tour as far as Courtallum, and always went with me into the forests; he seems to take great interest in his work, and the Collector reported on him very favorably. I examined his records and books, which are well kept, and his establishment is in good order; the Duffadars are in some cases too old for much hill and jungle work, but they are respectable, honest men; neither the Overseer nor any of his establishment are quite as much in the forests as I consider they ought to be, and I gave full instructions on this point, and the Overseer is in future to forward a copy of his diary monthly, which will shew his operations in detail day by day; his Appendix A. will, therefore, be only for his establishment in future. In my inspections through the forests day by day, I saw very much of the felling that was going on, and I always found the axe-men provided with vouchers and licenses and acting up to our rules, and I did not detect a single case of attempt to smuggle. Smuggling of timber undoubtedly does occur where our forests adjoin Zemindary tracts, and, until lately, Zemindary timber was allowed to be brought through our forests, which was of course a great encouragement to smuggling; timber might be felled in our forests, and if we only caught the parties in the act of bringing it out, and not in the act of felling, we could not stop it, if they said it was brought from Zemindary tracts; this has now, I am glad to say, been put a stop to by the Collector allowing our Overseer to levy seignorage on any timber being brought through our forests at the same rate as if it had been cut in the forests; it is an excellent rule, as there is no occasion that it should ever come through our forests, and it was, in fact, only an excuse for smuggling, and where one log might really be cut in the Zemindary tracts, ten would perhaps be felled in ours. I consulted with the Collector on the subject of placing the forests south of Courtallum under our department, and he approves of this arrangement, acknowledging that the Sub-Collector, in whose charge they now are, has not time to go into the forests, or to give them the attention that is necessary; he promised to address you on the subject. In the event of these forests being handed over to our department, I would recommend that Mr. Turnbull should be put in sole charge of this range, and that another Overseer be placed in charge of the Madura District. There is a good pucka-built bungalow at Wartrap, just vacated by the Sub-Magistrate's Cutcherry, which office has now been removed to another part of the district, and the Collector has offered the use of this to our department, and it might be taken over, and would serve as an office and store and house for the Overseer; and as the Wartrap forests are the nearest to Madura, and timber is sent from them to the Madura market, our department might, with advantage, open a small depôt at this place, and gradually introduce departmental working to a certain extent, as I have lately caused to be done in Salem, Cuddapah, Kurnool, and other districts, worked under the License and Voucher System. Wartrap is at the extreme north of the range, and the Overseer should not be allowed to remain there for any lengthened periods, but he should make visits of one or two months' duration to Vasúdevanallur, Kuddenelloor, Courtallum, Paupanassum, and Calcad,

and go thoroughly through the forests and supervise operations at each of these places. At Courtallum and at Paupanassum very good Chuttrums are always available. Considering the time that Mr. Turnbull has been in the department, I would recommend that his salary be increased to Rupees 100 per mensem, or the pay of a first Class Overseer.

7. *Revenue.*—The revenue of the forests north of Courtallum is very satisfactory, particularly when it is considered that there are very large tracts of Zemindary forest, and that with the exception of a small amount of timber that goes from the northern parts of the district to Madura, there is no export, and the market is entirely a local one.

8. *Destructions to forests by cattle and fire.*—The destruction committed by cattle in the Government forests is enormous, and the annual fires which do incalculable mischief, are all said to be caused by the cattle drivers. Almost all the villages along the foot of the hills are huge cattle pens, thousands of cattle being brought from all parts of the district to have the advantage of grazing over the Government forests; there is no attempt to provide forage below, and even the manure is in no way utilized.

9. *Grazing dues.*—There are no grazing dues, and our department has no control over the cattle drivers. I would suggest that small dues should be levied, and that the right to graze should be confined to certain tracts, and that the sums collected should be laid out in small extra establishments to see that the graziers confine themselves to the tracts allotted to them, and that no more mischief is committed than is absolutely necessary (saplings and young trees are often cut down entirely, when only the leaves and young branches are required), and that the grass and jungles are not set fire to. The very fact of these men knowing that they were in a measure under our control, and had to conform to certain rules, would make them less reckless than they are at present, and I do not think that we should often have fires in tracts that they were not allowed to visit. It has been sometimes alleged that a prohibition against forest fires and against Kumeri cultivation will increase the inroads of wild beasts, and tend also to increase fever; this view of the case has been urged as a plea for these practices by many of the ryots and others in this district interested in their continuance—practice does not prove these allegations to be correct where the grass is not burnt. I have always observed that it grows to the same height as where it has been set fire to, and the only difference is that when burnt the young green grass makes its appearance about a fortnight or three weeks earlier, and this is the only reason why the cattle drivers set fire to it, and many have acknowledged the same to me; these fires often sweep for miles through light forest country, and the damage to young saplings and fallen seed, &c., may be easier conceived than expressed. In Kumeri ground the virgin forest is superseded by a dense rank thorny, almost impenetrable vegetation, which must be more unhealthy than the original forest, and is certainly a more likely cover for tigers and wild beasts.

10. *Forest resources.*—The forests north of Courtallum are rich in valuable jungle timbers; but those most sought after are the Vengay, the Cong, and Nang. The Cong (which I procured during this tour for the first time in flower), turns out to be a new species of *Hopea,* nearly allied to *Hopea parviflora* (the Kiral Boghi of South Canara); the wood is very similar to that species, and is a very valuable timber; the name of Nang is given to two or three species of Mesua, very abundant in all the forests of this district; the timber is exceedingly hard and heavy, and is very durable under ground; it is the iron wood of Ceylon, where it is much appreciated for engineering purposes. I may mention that these Mesuas are common in most of our western forests, but the timber is generally but little used, or quite unknown; in fact, I have seldom been able to get a native name for the tree. Axe-men say that they dislike felling it, as the wood is so hard that it injures their axes, and in coffee estates many dead trees of it are often to be found standing. There are several kinds of very useful jungle timbers in this district which are unknown to the natives, and, consequently, but seldom felled. I was fortunate enough to discover two quite new trees, which, like the Cong, do not appear to grow to the north of this. The Kat Jura, a new species of *Adenochlæna* and the Vellay Tovcray, a new species of *Diospyros* with a

calyx, which enlarges round the fruit, the wood of both these is used for various purposes. I have preserved specimens of these trees and of the Cong, and hope shortly to have them figured.

11. I have previously explored the forests of this range north of Courtallum, and do not therefore enter more fully into the capabilities, &c., of the different tracts severally. The Zemindary tracts of Sheathoor, Shevagherry, and Chokampatti are a great drawback to conservancy, and if Government could at any time purchase any of them outright, or obtain long leases, it would be very advantageous; it is difficult to understand how these Zemindars ever came to have any legal right to such large tracts of hill forests, and it would certainly be advisable to have them roughly demarcated, and boundary marks put up, if possible. The following are the principal timber trees found in these forests :—

Native Name.	Botanical Name.
Tek (or the Teak)...	*Tectona grandis.*
Trodagatti (Blackwood)	*Dalbergia latifolia.*
Vengay...	*Pterocarpus marsupium.*
Shem (Red Cedar)...	*Soymida febrifuga.*
Cong...	*Hopea sp. nov.*
Nang...	*Mesua speciosa.*
Nir Nang...	*Mesua Coromandeliana, and a variety of this species.*
Aynee...	*Artocarpus hirsuta.*
Ayneepillao	
Angelli...	
Panas...	*Artocarpus integrifolia.*
Mailedu...	*Vitex altissima.*
Maile...	*Vitex alata.*
Kadambi...	*Nauclea cordifolia.*
Do.	*Do. parvifolia.*
Agal	*Chickrassia tabularis.*
Sandane Vembu (the White Cedar) ...	*Cedrela toona.*
Malle Kone (Pink Cedar)	*Acrocarpus fraxinifolius.*
Shembaga Pala	*Litsæa sp.*
Karangalli	*Acacia sp.*
Madagari Vembu	*Bischoffa stocperianus*
Vekali...	*Conocarpus latifolius.*
Veveyala...	*Lagerstræmia microcarpa.*
Poombadri...	*Bignonia suaveolens.*
Devadarum (Bastard Sandal)	*Erythroxylon Indicum.*
Vace Mara (Satinwood)	*Chloroxylon swietenia.*
Vellay Thoveray	*Diospyros sp. nov.*
Pulikumalee	*Gmelina arborea.*
Trelaypala and Vadarasee	*Alstonia scholaris.*
Nedda Naratty	*Guatteria cerasoides.*
Maravetti	*Hydnocarpus inebrians.*
Oona...	*Grewia tilicefolia.*
Poomara or Pulachi	*Schleichera trijuga.*
Pine (Poon spar)	*Calophyllum elatum.*
Maa (wild Mangoe)...	*Mangifera Indica.*
Marada...	*Terminalia glabra.*
	Terminalia arjuna.
Nawal	*Eugenia jambolana.*
Nawar	
Kanupala	*Mimusops Roxburghiana.*
Milla Chirian	*Elæocarpus glandulifera.*

Native Name.	Botanical Name.
Ippi or Illupi	*Bassia latifolia.*
Pale...	*Bassia elliptica.*
Nelle...	*Emblica officinalis.*
Mulla Vengay	*Briedelia sp.*

In addition to the above, there are many jungle timbers of considerable value.

12. *Forests south of Courtallum.*—Mr. Pennington, the Sub-Collector, who is at present in charge of the forests south of Courtallum, accompanied me in my tour south as far as Shingamputty, and visited some of the forests with me, and I am much indebted to him for information and assistance during my tour.

13. *Courtallum Forests.*—From Courtallum I ascended into the hill forests to the south, and spent two days in exploring them. A considerable quantity of teak grows near the foot and on the lower slopes, but it is not of fine growth, and is besides much damaged by cattle and fire; the felling of this was put a stop to about two or three years ago, and with conservancy and care, a small amount of this timber may be made available for future years. Blackwood and Vengay are also met with in the same localities; ascending to an elevation of 2,000 to 2,500 feet, all traces of Teak disappear, but the forest is of superb growth. Kong, Nang Angilli, Maile, Shembajipala *Acrocarpus fraxinifolius* and *Lagersheinea microcarpa* (the Vevayla of this district) grow to an enormous size, and I saw trees of *Acrocarpus* considerably above twenty feet in girth and of immense height; the forests also abound with many other valuable jungle timbers, and the growth of all the trees is very fine. The best part of these forests has been given up for Coffee, and there would be considerable difficulty in getting out the timber (unless sawn up in the forests) from the tracts now remaining; they should, however, be reserved. The forest in which some of the native Coffee estates have been opened has been given on the condition that the trees were left standing; the result is, that neither Coffee or forests are of much value; the forest trees have been considerably thinned out, and what remain could not be felled without the destruction of the Coffee, and the Coffee trees give a miserably small crop under the shade of large forest trees.

14. The Sub-Collector has stopped all felling for firewood within two miles of the station of Courtallum, and this order should be carefully kept in force.

Chinchona and forests on the Chinna Kalyraty.

15. Returning to Courtallum I proceeded to the source of the Varna river, which runs down to Alwarcoorchy the Chinna Kalyraty, where there is a small Government Chinchona garden at an elevation of from 3,000 to 4,000 feet; a small plot of less than half an acre has been cleared in the forest, and the few plants of Chinchona Succirubra planted are growing very luxuriantly. There are also several plants of C. Officinalis; these, however, did not exhibit a good growth, as the elevation is not sufficient for this species, and some have died. I spent a day examining the forests up the ravines on these mountains; they are rather inaccessible, and not of any great extent, as much forest land here also has been cleared for Coffee, but they contain much good timber. The next day I had intended to proceed direct to the Ayen Coil Pass, in the Alwarcoorchy forests; heavy rain, however, had caused all the rivers to rise, and this route became impracticable, and it was with considerable difficulty that I got back to Courtallum.

16. *Alwarcoorchy Forests.*—The day after my return from the Chinchona garden I proceeded via Kaddyam, and encamped in the Shevanshalum valley, near the foot of the hills, due west of Alwarcoorchy, from this I explored the Alwarcoorchy forests. I ascended by the old Pass, which leads through these forests past Ayen Coil into the Travancore country. Just above Ayen Coil, at the entrance of the heavy forest, and at no great elevation (about 800 or 1,000 feet), there is a small native Coffee estate of about twenty acres, and the Coffee is growing very luxuriantly, and has a heavy crop under the shade of plantain trees; beyond this it is all heavy forest in every direction, and there are no clearings whatever; the ascent is very gradual, and the head of the Pass can hardly be much more than 2,000 feet above the plains; the mountains on each side rise to a great elevation, and their slopes are densely wooded; the head of the Pass is about five or six

miles beyond Ayen Coil, and then the descent down the western slopes is gradual; the British frontier is said to extend down these slopes into the plains, but the frontier lines are not clearly defined or laid down. Mr. MacGregor, the late Sub-Collector, in alluding to this subject in his report upon these forests, writes as follows:—"The demarcation and survey of the British and "Travancore frontier has not been attempted, nor is it, I understand, contemplated, but these "forests afford one of the many instances of the necessity for such an undertaking; in all proba- "bility the demarcation might now be effected without dispute, but twenty years hence a question might arise involving thousands of acres, and the evidence now available will have disappeared."

17. Demarcation should not be delayed. In future years when railroads may enter both territories, these forests will become of great value. The forests east of the crest can be worked with comparative ease, but west of the crest the timber would have to go down the Travancore side. As the Travancore boundary in several instances comes down into the plains on the eastern side, and, in other instances, the British boundary extends over the crest and down to the plains on the western side, it would be an admirable arrangement if some exchanges of these forest tracts could be effected when demarcation takes place. Mr. MacGregor in his report states that these forests contrast unfavorably with those of Paupanassum, where all the largest trees are of the valuable kinds, Cong, Nang, and Maile. I found, however, abundance of these trees in this forest, though many of the two former, especially the Cong, had been cut in the immediate vicinity of the Pass; almost all the trees enumerated in my list of the timber trees, north of Courtallum, are to be found in these forests, and their growth is very fine. I may here mention that all the ghaut forests of this district are very similar, and nearly the same trees are found in each forest. Descending again by the same route, I made detours through the forest and returned to the Shevansholum valley. I next ascended the forests up the Garna river, which runs from the W. S. W. into the valley, and crossing a ridge, I descended through the hill forests to Paupanassum.

18. *Paupanassum Forests.*—From Paupanassum I explored the forests due west of that place, and on the left bank of the Tambrapurny river. There are belts of Teak in the forests of the plains, but it is of very poor growth. Vengay and Blackwood are also found in the same localities, and sometimes of fair growth. Following up the ravines and tributaries of the Tambrapurny river to some elevation, immense tracts of superb forest are entered. Here all the more valuable timbers grow magnificently, with the exception of Teak, which disappears. This is certainly the most valuable tract of forest in this district, and should be strictly reserved. Land has been applied for here for Coffee, but it was refused. Many parts of these forests can be worked without much difficulty.

19. *Shingamputty Zemindary.*—The Tambrapurny river is the boundary between the Government forests and the forests of the Shingamputty Zemindar; the hill forests of this Zemindary are of very great extent, and of great value. Returning to Paupanassum I went up the right bank of the Tambrapurny past Shoramothyan Coil, and encamped at the foot of the mountains to the W. S. W. of that place. There is a considerable tract of forest here, called the Kattlaymullay, which belongs to a pagoda; it is bounded north and south by two tributaries of the Tambrapurny. From this I ascended the hills to the Government Chinchona Garden, which is at an elevation of about 3,000 feet, or a little more above the sea; an acre of ground has been cleared in the midst of a large tract of fine forest, and there are eighty to ninety plants of *C. Succirubra* growing very luxuriantly, and about thirty plants of *C. Officinalis* also looking healthy. There can be no doubt that the *Chinchona Succirubra* will grow very well on these mountains, and it is advisable that these small experimental plantations should be taken care of, to ascertain to what size the tree will grow in these parts. They are, however, in very inaccessible places, and it is very difficult and expensive to get any one to look after them. I would not, therefore, recommend any extension of the experiment at present.

Chinchonas.

On these mountains there is an immense extent of fine heavy forest containing most valuable timbers; it stretches away north as far as the Ayen Coil Pass, and all the tract left blank in the Survey Map is dense forest. To the west it extends to the ridges over the Travancore plains, British territory extending here to the edge of

Extent of forest.

the western crest. Near the Chinchona Garden very large tracts of forest, and generally those portions most accessible have been destroyed for the hillmen's cultivation (called Punjai in this district.) I found here, for the first time, the Redwood called Shenkurani, mentioned to you by Mr. MacGregor as growing on these hills. The name Shenkurani was sometimes given north of Courtallum to the *Soymida febrifuga* (or Red Cedar,) and only means, I believe, Redwood. The tree known here by this name is of the order *Anacardiacea*, and appears to be something quite new, probably a species of *Holigarna*, but I could not find it in flower. A black juice issues from the bark, when wounded. It is most abundant, and grows to a girth of twenty feet, and to a great height. It will be a valuable furniture and fancywood. From the Chinchona garden, I walked across the Government forests to the ridge on the Uttermallay, just below the Aghusteer peak. The Resident of Travancore has a small bungalow here, which, however, was quite deserted. It is Government forest all the way to the ridge about eight or nine miles from the Chinchona. The country is tolerably level to within two miles of the bungalow, and it is all dense heavy forest. Beyond this there is a considerable ascent through tracts of reed, and what forest there is becomes more stunted

Destruction of forests of Kumeri

A valuable new timber.

Government forests extend to western crest.

20. In returning the next day to the Chinchonas, I ascended a grass hill, called the Kallay Vellay, from which I obtained a fine view of all the Government forests. During this trip I found two groves of the *Bentinckiæ* palm, and I secured a small quantity of the seed, which I have forwarded to you, together with many other valuable seeds collected on these ranges, for transmission to Kew.

21. The natives here divide the forest trees into two classes, viz., the Kolamarams and the Pallezade.

22. The following fifteen trees only come under the first Class :—

Tek.....*Tectona grandis.*
Thodajetti.....*Dalbergia latifolia.*
Ayni.....*Artocarpus hirsuta.*
Vengny.....*Pterocarpus marsupium.*
Cong.....*Hopea sp. nov.*
Nang.....*Mesua speciosa.*
Shem.....*Soymida febrifuga.*
Maddageri Vembu.....*Bischeffia Ro.*
Karangalli.....*Acacia.*
Devadarum.....*Erythroxylum Indicum.*
Maile.....*Vitex alata.*
Kadambu.....*Nauclea cordifolia.*
Agal.....*Chickrassiæ tabularis.*
Poombadri.....*Bignonia suaveolens.*
Shembaja Pala.....*Litsæa sp.*

All other trees belong to the class Palezade, but I need hardly mention that there are very valuable sorts amongst these latter.

23. *Calcad Forests.*—From the Chinchona plantation I proceeded viâ Shingampatty to Calcad. There is a very large block of teak at the base of the mountains near this, and it extends a mile or two up the hill slopes. There must be several thousand acres, and as it grows almost to the exclusion of every other kind of tree, it has more the appearance of a plantation than a natural forest; it has been all cut over periodically, until the last two or three years when all felling was stopped, and almost all the young trees are from coppice stools. When the stool is young there is often a fine straight healthy coppice, but from older stools the growth is not so good, and much pruning is necessary, particularly where there are several coppice shoots from one stool. The

Teak

whole of this should, I think, be strictly preserved, and it will become a valuable tract if properly pruned and cared for. If we take charge of the forest south of Courtallum this must receive much attention from the Overseer, and a small permanent establishment might be sanctioned for it.

Hill Forests.

24. I ascended the hills and encamped for two days in the forests; these are not of such value as those at Paupanassum; much of the heavy forest has been given up for Coffee, though a good deal still remains, but it is very inaccessible. The dry forest at a lower elevation contains a good deal of valuable timber, but the growth is not very fine. I here met with two new timber trees—the Pudangalli, a tree well known to the natives and planters, yielding a very hard heavy redwood, a new species of Pœciloneuron; this tree only grows in the heavy forest and on the banks of streams it is very abundant; and the Mallay Mangadde, a new species of *Ormosiæ* (*Ligumimosæ*), yielding a valuable hard wood. I procured flowering specimens of both these trees, and hope to have them figured shortly.

Two new timber trees.

Kumeri.

25. *Kumeri or Punjai.*—This destructive cultivation formerly carried on by the hill tribes was put a stop to in this district about two or three years ago. Care must be taken that it is not again reverted to. It is most important now to reserve all the forest that remains on the eastern side of the ghauts.

26. *Coffee.*—No more forest should be given up in this district for Coffee. There is abundance of fine land better adapted for it on the Travancore side of the range.

Bamboos.

27. *Bamboos.*—There is a very great scarcity of bamboos throughout the district. They are, in fact, only met with in one or two localities, and, where found, are very sparse. These patches should be conserved, and their extension by seed might be attempted. The bamboo dies down when it seeds; by whole clumps when all the culms seed together, which is generally the case, or culm by culm if the culm seed at different times, which sometimes occurs. In localities where the article is as scarce as it is in this district, it stands a chance of being entirely extirminated if cut down without any restriction before it seeds.

Revenue and Establishment.

28. The present sanctioned establishment for these forests, south of Courtallum, amounts to Rupees 180 per mensem, or Rupees 2,160 per annum; of this, Rupees 90 is for Paupanassum, 50 for Alwarcoorchy, and 40 for Calcad. The revenue from July 1866 to June 1867 amounted to Rupees 3,110-9-9 for the whole range, of which Rupees 1,442-8-0 were collections under the head of Timber, and Rupees 1,668-1-9 under Firewood, &c. The amount sanctioned for establishment is sufficient, though, if we take over the forests, some alterations in its distribution, &c. will be necessary. With close supervision from a good Overseer, the receipts will probably be considerably raised. The present establishment is not as it should be. Smuggling is rife, and there is little or no supervision.

Map.

29. *Forest Map.*—I have roughly sketched in the forests, Zemindary tracts, &c., into the Survey map, and it was my intention to have forwarded a Forest Sketch Map with this report. This would, however, delay the report, and I think it important to send it at once, but I will have the Map sketched and filled in when the services of the Artist are available.

Forest produce.

30. *Gums, Resins, Cardamoms, &c.*—The black dammer (the *Camarum strictum*) and the gamboge are abundant in the forests of this district, and many other resins and gums are common. I never once met with any one collecting any of them. Cardamoms abound in several forests. I found Travancore people collecting them in our Government forests on the Alwarcoor-

chy hills. The Travancore Government make about a lac of Rupees annually by their Cardamoms, (their last sales were at the rate of Rupees 3 per pound). We make nothing.

31. *Botanical Specimens.*—As I was through many tracts as yet very little explored, I was able to collect a considerable quantity of new and rare plants for the Herbarium at the Museum, which will be forwarded shortly. My means were limited, and as it was the height of the monsoon, I had great difficulty in drying my specimens, or in keeping them dry, and some were destroyed.

32. *Travancore Forests.*—From Tricknagoody I ascended the Myendragherry, and explored the forests both of the ghauts and plains on the Travancore side for twenty miles north of that mountain as far as the Pachymullay. I was quite astonished at the fine Teak found in the forests at the foot of these hills. I descended from the Pachymallay to Colashageram and thence into Trevandrum; it is perfectly lamentable to see the immense destruction of forests on the Travancore side from the Kumeri cultivation. At Trevandrum, I saw the 1st Dewan, Sir Madava Rao, and had a long talk with him about the forests of the Travancore territory, and pointed out the great damage annually occurring from the destructive cultivation of the hill tribes. There will be a great outcry against this in future years, and no one will understand how it could ever have been allowed. I also met Mr. Vernede, the Travancore Conservator of Forests. He informed me that there are enormous tracts of untouched Teak forest in the territory, and that if a market could be found, he could supply annually, for many years, some 10,000 logs of Teak. They are at present very badly off for forest roads and communications. During the last decade the average amount of Teak sent to depôt has been 3,787 candies annually; during the last year 2,814 logs of Teak containing 6,610 candies were brought down to the Coast depôt, but only 4,375 candies were sold.

33. *Coffee under shade.*—Much has been written lately about the practicability of growing Coffee under shade, with a view to lessen the ravages of the Borer. During my late tours through the Madura, Tinnevelly, and Travancore ghauts, I have seen estates, both European and Native, at different elevations under shade; some under the shade of the indigenous forest trees, others under the artificial shade of the Jack, the *Eriodendron anfrastuosum* (or white flowering cotton tree), the Plantain, and the Castor-oil plant. The following observations may, therefore, be of some interest: All the estates that I have seen under the shade of large forest trees, though these latter were generally considerably thinned out, bear a most miserably small crop, though the plant often grows very luxuriantly. In estates under the Jack the plant grows with very great luxuriance as to leaf, but the crop is always small, and the Jack tree grows too large, and the foliage is too thick to admit sufficient light and air, and the drip is probably injurious to the blossom. Some estates under the Plantain and the Castor-oil plant were yielding very fine crops, but these estates were generally at no great elevation. I am inclined to think that the shade of the Plantain tree can be used to great advantage in estates below an elevation of 2,500 or 3,000 feet, or in estates in a dry climate, or in localities subject to long droughts. There can be no doubt, however, that the Plantain takes considerable nourishment out of the soil, and it is a question how long estates planted with it will continue to give heavy crops without considerable outlays in manure. The Plantain tree would never be attacked by the Borer, but the Jack is. I was much struck by the estates on the Myhendragherry and Pachymallay at the extreme south of the western chain of ghauts. In the best kept estates in Wynaad, one always sees a considerable quantity of weeds, and most estates are overgrown with them. Here, however, there was not a vestige of a weed of any description on any of the estates. The weeding is done by contract, eight annas per acre monthly being paid from the commencement. In estates kept like these, we shall not probably hear much of the Borer, the Bug, or any other insects.

APPENDIX E.

FOREST OFFICE,
RUSSELLCONDAH, 30*th April* 1868.

From

MR. T. G. FREEMAN MACCALLY,
Overseer of Forests, Goomsoor.

To

MAJOR R. H. BEDDOME,
Acting Conservator of Forests, Madras.

SIR,

I beg to forward my Annual Report and Accounts for the official year 1867-68.

2. The forests of Jarjomungolo, Soobardah, Bopunghy, Nongolocolo, Boogoodah, Kurcholy, Jugganathprasad, Kookloobah, Mudapoor, Soordah and Ragadah, which bear the names of the villages in which they are situated, or adjacent to, have been duly visited. Portions of the Jangomungolo, Bopunghy, Nongolocolo and Soobadah, where large Sâl trees were discovered, have been specially reserved, while in other portions of the forests, the trees of limited dimensions are permitted to be felled under the Voucher and License System, thus all the larger dimensions of Sâl discovered in the forests under my charge are conserved for Government purposes.

3. The Doorpinghia forest up to Doorgaprasad, at the foot of the Ghaut, was also examined, in it was discovered a few large Sâl trees from 5 to 6 feet in circumference, and an innumerable number of Sâl saplings from 3 to 4 feet in girth. No licenses are issued for felling in this direction, and the Khonds of the villages in this locality were duly warned not to meddle with any of these trees for the planting of their walls, unless they were authorized to do so by the Forest Department.

4. The Bheyra (Satinwood) Chloroxylon Swietenia, has been discovered growing in different localities in the jungles eight miles south west of Russellcondah, between Boroborosinghee and Kontassally up to the ridge of hills east of Kaliambah, and on the range of hills west of Soordah to Bodunghy and from Bondogooha to Ragodah, hundreds of these trees were to be seen about 2 to 3 feet in girth, some of them although with stunted stems had straight promising branches, while others had straight stems varying in length from 2 to 10 feet and in height about 20 to 30 feet. These trees I have restricted from being felled by wood cutters, wherever it has been found in my range, while they were freely permitted to use the foliage as medicine for their cattle whenever required.

5. The Sissoo (Dalbergia latifolia Pia Sâl), Pterocarpus Marsupium Bherjra (Chloroxylon Swietienia), and Karodha (Terminalia Chebula), saplings of 2 to 3 feet in girth, growing together on the Thilsinghy Hill where the Sâl is scarce, have also been specially reserved.

6. In traversing the different mootahs of Goomsoor during my monthly inspections, I have observed that the ryots of villages were taking advantage of Rule 11, which freed them from taxation on account of firewood, and instead of cutting it from low scrub, were cutting it in portions of the medium sized jungles and removing billets of about 8 to 10 feet in length, and 4 to 6 inches in diameter, which they expressly said was for cooking purposes, leaving the scrub jungles untouched within their village boundaries. They were duly warned that should they continue doing so, that the privilege free of taxation would eventually be denied them. The medium sized jungles bordering on the forests are obliged to be conserved to supply the ryots with unreserved timber for building and agricultural purposes free of taxation to restore their houses when burnt, which is of annual occurrence in Goomsoor during the hot weather.

7. One hundred and sixty (160) houses of ryots having been burnt during the year, seven hundred and sixty-seven (767) cart loads unreserved kinds of wood were permitted from the forests free of charge, as registered in this Office, for their re-construction.

8. The Zemindary estates of Duspullah, Nyaghur and Antghur, form the east, north-east and south eastern boundary of the Goomsoor forests, while those of Runabah and Bodagodah their south and south western boundaries of these. The Zemindars of Bodagodah and Ramabah sell wood to the public, the payment being a small fee of 10 Annas per cart load, under-rating the Government seignorage by Annas 14, and in consequence traders flock to the Zemindary generally, and a few of them having discovered that there was a route from the Ramabah Zemindary in a northerly direction through the Government forests in addition to the one southerly viâ Sooradah. Great quantities of wood are being removed from it, and several traders, who hitherto dealt with the Government forests have resorted to the Zemindary, having there the benefit of cheap seignorage. These Zemindary estates having been placed under no restrictions, is very disadvantageous to our seignorage collections.

9. One hundred and nine Sâl logs were floated during the rains, and removed to this depôt, the greater portion of which has been already disposed off.

10. The Executive Engineer has been supplied with 424 Sâl logs during the year for the Jail and School buildings, Burhumpore Brigiva bridge and Chilka Lake canal works to the value of Rupees 2,699-9-0.

11. Four pairs of buffaloes and four carts have just been attached to this department at a cost of Rupees 403-7-0, which was expended from working charges allotted for the year. With this aid now, we shall be able to be somewhat independent of the will and pleasure of cart owners, and our operations will, in a measure, not be retarded, as we shall be enabled to bring timber from the forests which cart owners refused.

12. The health of my Establishment has been good, considering that myself, Writer and Peons, have only had slight attacks of fever occasionally.

13. One case of evasion of conservancy rules prosecuted under Mischief, was sentenced by the Sub Magistrate of Goomsoor to a fine of Rupees 8, forfeiture of license and confiscation of timber.

14. The pay of the Peons of this department is exceedingly small for the duties they have to perform, in comparison to other departments, and quite inadequate for their support, which is as follows: —one Duffadar, Rupees 5, one Peon, Rupees 5, two Peons at Rupees 4 each, and six Peons at Rupees 3 each. I would therefore beg that their pay be increased to that drawn by the Revenue Peons in this district as follows:—Duffadar at Rupees 8, and Peons at Rupees 6 each. With reference to myself, I would beg to state that I am now nearly three years in this department, the duties of which are quite different to that performed by my predecessors, notwithstanding the responsible nature of the duties devolving on me, the constant marching and consequent inconveniences and privations I am exposed to in unhealthy tracts, where there is no accommodation or shelter procurable. I have been obliged to adopt measures to enable me to undertake my monthly inspection and circuits as effectually as possible, by the maintenance of a Tent and Camp Establishment permanently, induces me to solicit your favorable consideration, and that you will be good enough to obtain sanction for my salary being also increased.

Financial Results, vide page 2, paragraph 9.

I have, &c.

(Signed) T. G. F. MacCALLY

Overseer of Forests, Goomsoor.

APPENDIX F.

ASSISTANT CONSERVATOR'S OFFICE,
CODOOR, 16*th April* 1868.

From

MR. H. H. YARDE,
Assistant Conservator of Forests.

To

MAJOR R. H. BEDDOME,
Officiating Conservator of Forests.

SIR,

I have the honor to submit the Annual Report of the forest range of Cuddapah for the past year.

2. I have continued in charge throughout the year. The Overseer of North Arcot, Mr. Brougham, was promoted on the 29th December 1867, to 2nd Class Overseer in the Cuddapah District, sanctioned in G. O. No. 2395, dated 11th October 1867, and Mr. Thistlethwaite, Overseer Anamally Range, was appointed in Mr. Brougham's place in the North Arcot District. Mr. Brougham is however doing duty at North Arcot, that at present being the most important range.

3. The collections of the range have been very good, except in the Yaklapalium forests in the Dhoor Taluq, where they have been very indifferent, owing to the ravages of a man-eating Tiger in that vicinity.

4. Every means have been taken for the protection of the forests, and to prevent license holders from smuggling, extra seignorage timber on licenses of under seignorage, and the cutting of undersized trees. The only great difficulty is the prevention of fires. Many warnings were given to wood cutters and others frequenting the forests, who are often apt to set fire to the grass to free themselves from the surprises of wild animals, but with little result.

5. During the year nearly 9,000 forest trees were cleared of creepers, which, for the most part, received my supervision, and at other times that of the Department Duffadars.

6. No timber was felled or stored in our depôt during the year, our stock having been sufficient to supply the small demands that are now made on it.

7. I annex a statement shewing the collections on timber, bamboos, &c., removed from the forests during the year by license. The amount realized on Railway fuel being separated from firewood.

8. About 240 bandy loads of timber were confiscated during the year, for the most part the timber was seized for being under-sized or coming from the forests without licenses, or because extra seignorage timber, therefore not of the kind specified in license.

9. No timber was sold during the year to Public Departments, but 557 cubic feet 7 inches, valued at Rupees 695-11-8 was sold to private individuals. Balance of timber on hand is now 5811-11¾ inches, valued at Rupees 6,868-9-7.

10. *Plantations.*—Want of rain prevented planting operations, however the few showers that fell in September last enabled me to get through some transplanting, viz., Red Saunders 3,000, Thumba 1,200, and Wild Mangoe 100 plants. More than half of these have died out, the remaining are healthy, together with the plants of former years.

11. I annex a statement shewing the result of criminal prosecutions during the year.

12. The district was unusually feverish. I had several severe attacks of fever during

the year, and the Duffadars and Peons have also suffered much. Ballapully especially was very feverish, and peons had to relieve one another almost weekly, notwithstanding which two died.

13. A tract of jungle about four miles in extent near the Railway cutting at Ballapilly was fenced in at a cost of Rupees 640-2, together with the piece of ground at Codoor, occupied as Red Saunders plantation, which cost Rupees 148-5-6. A simple fence demarcated the boundary before, and it was found difficult to keep out men and cattle, but since the fence under notice was completed, it has served our purposes better.

14 Some seeds of Acacia Arabica were scattered wherever small wastes were observed in the reserve, but failure of rain has prevented the seeds from germinating. The reserve is guarded by two watchmen at at annual cost of Rupees 144. Owing to the rapid clearing of jungle, I am desirous of forming more reserves, and have in view the tract of jungle opposite the present reserve, but am unable to fence it, in consequence of the claim of Kistnamah and Boochiah Naidoo, brought to your notice in letter No. 45, dated 9th July 1867.

15. Some valuable Sandalwood trees were reported to me to be seen in the Thirroomullay or sacred hills of Tripetty. I intended exploring the hills for the purpose of estimating the value of the tract, as the Collector, Mr. Robinson, observed that it did not appear to him desirable, and that the gain from such an excursion would be very incommensurate with the amount of irritation it might produce. I desisted from going there.

16. The Tahsildar of Pullampett has been instructed by the Collector to see the whole forest boundary towards the Venkatagherry Rajah's limits, as some of the Rajah's Tahsildars seeing the Revenue Settlement boundary marks at the foot of the hills in the Muttlewarah country of the district, are disputing in consequence their claim to the whole of the hills on the Venkatagherry side, instead of a portion only. There are many old ryots whom I have referenced on this matter, and who are willing to point out the correct boundary, where some pillars still stand to demarcate the boundary in dispute.

17. To encamp on the hills is now quite impossible, there being no water near at hand, but an early opportunity will be taken of settling this important matter.

18. In conclusion, I beg to observe the great assistance I have received from the Revenue Officers generally during the year, and the willingness of the forest establishment who have aided and worked under me, notwithstanding the severe and repeated attacks of fever they had all endured.

Financial Results, vide page 3, paragraph 21.

I have, &c.,

(Signed) H. H. YARDE,

Assistant Conservator of Forests.

APPENDIX G.

NUNDYAL,

8th April, 1868.

From

MR. T. SHEFFIELD,

Assistant Conservator of Forests.

To

MAJOR R. H. BEDDOME,

Officiating Conservator of Forests.

SIR,

I have the honor to submit the Annual Administration Report of Nullamallay Forests for the year just closed.

2. I have continued in charge of the forests of this district throughout the year. During the year, I have visited the forests of Bachapilly, Roodrar, Madapoor, Buswapoor, Mut-

ticanda, Yellegode, Venketapoorum and the Yellaconda forests bordering on the Nellore District; being away from Head Quarters, between four and five months. Most of the above forests and the forests in Markapoor Taluq have been also inspected by the Overseer, so that between us the forest has had constant and strict attention, and conservancy has been as rigidly enforced as it could be under the License System. Smuggling has decreased, and legitimate felling increased in proportion. The revenue last year was Rupees 21,366-1-11, this year it has risen to Rupees 36,188-14-3, being an increase of Rupees 14,822-12-4.

3. This will, I hope, be considered satisfactory, still I believe it would have been much higher, probably 3 or 4,000 Rupees, had it not been for the number of man-eating tigers infesting the forests: these animals have caused great destruction to human life during the year, and one notorious one infesting the forests to the south of the Nundyconnama Pass has killed so many people that he has at last frightened all the wood-cutters away, and as two of my chief timber stations (Bachapilly and Madapoor) are in this portion, the result has been a loss of forest revenue. On the 3rd March, a tiger was killed on this ghaut, and it was thought at first to be the great man-eater, but as several people have been attacked since it was killed, there is reason to believe that there was either more than one man-eater in that spot or that the real fellow is still alive.

4. *Forest improvement.*—In all my visits to the forests, I have made the peons accompanying me carry axes and cut such creepers as we saw in our journey; the Overseer did the like, and although I did not note the number, I should think that between two and three thousand trees have been cleared in this manner, and with the assistance of paid labour to the extent of Rupees 40.

The brushwood and grass has been cleared from all outlying timber and from around the Cinchona plants to protect them from forest fires. The fires are now all over, and I am glad to report that no timber was burnt and none of the Cinchonas suffered from the fires; still they are nearly all dead, but this I will report under its proper head.

5. *Roads.*—According to the directions conveyed in Government Order, No. 2580 of 1st November 1867, I commenced the road from Eranapaud to the foot of the Muttyconda Ghaut. The whole length of road sanctioned is 7 miles, 626 yards, and the estimate is Rs. 7,450. Of this, half, or Rs. 3,750 was sanctioned from local funds to be expended in the year under report; with this amount, I have completed 4 miles, 626 yards of road, 5 miles of jungle cleared, built the masonry road dam and metalled the slopes approaching streams—there now remains three miles of road to be made from forest funds, during the year now commenced, but this three miles is in dense jungle away from villages, it will therefore cost a great deal. People will have to camp in the forest, which they greatly object to, as water is very scarce, but fever is prevalent. These causes, combined with the fact that the Irrigation Officers require all the labour they can procure and the high rates of pay given, will render it very difficult for me to procure labour on the road, and even if I succeed in getting coolies, I shall have to pay very dear, probably 6 or 7 Annas per day; however, that I shall be able to complete the roads from the estimate, there is no doubt, and when it is completed to the foot of the Hills, which I hope it will be by the end of September, we shall be able to cart our heavy logs to Eranapaud with ease and with less expense than at present; and should the road be extended to Nundyal, as proposed by the Collector, we shall be able to sell timber from the Nundyal Depôt at least 4 Annas per cubic foot cheaper than we do at present.

6. *Timber felled.*—I have felled 3,059 cubic feet of Nulla Muddie timber of large scantling during the year. Of this I brought to Nundyal Depôt only 100 cubic feet (as it is cheaper to cart after being somewhat seasoned) the remainder is in depôt in the forest, as is also $796\frac{8}{12}$ cubic feet which were felled last year.

7. *Forest Cattle.*—We have two elephants at work in dragging the above timber. I received them in the middle of January, and commenced work with them on 1st February: they

have brought 130 beams to the head of the slip and have 186 still to bring; but as I must have all these beams in Nundyal before the rains commence, I am trying to get contractors to drag these 186 to the head of the slip, when our elephants will slip them. From the foot of the hills to the Nundyal Depôt, they will be carted by contractors.

8. *Timber, &c., taken on License.*—The subjoined statement shows the number of bandy loads of timber, bamboos, and firewood brought from the forests under licenses, on payment and free during the year.

List shewing the quantity of Timber, &c., taken from the forests on License during the year.

Description of Timber.	Bandy Loads.	Head Loads.
Reserved Timber, at Rupees 3 per Bandy.....	6,331	.....
Do. do. at „ 2 „	25	.....
Junglewood at „ 1 „	8,722	.....
Bamboos at „ 1 „	5,729	9,117
Charcoal at „ 1 Cavidy load.....	.....	14,548
Firewood, at Annas 4 per Bandy.....	5,031	.....
Do. free „	4,107	.....
Agricultural wood.....	570	.....
Total.....	30,515	23,665

9. *Confiscations.*—Our confiscations this year have been very small. The amount realized from the sale of confiscated wood is only Rs. 1,066-10-6. Of this sum, Rs. 844-10-6 have been credited to Government and Rs. 222 has been paid to informers. Nearly all the wood was "Junglewood" and of little value, but the prosecutions on account of it have been numerous, and in nearly all cases convictions have been obtained, but this you will have seen from the quarterly lists of offences submitted to you.

10. *Timber sold from Depôts.*—I have sold $690\frac{7}{12}$ cubic feet of timber from the depôt during the year, and have now in Nundyal Depôt only $551\frac{11}{12}$ cubic feet according to my accounts, but actually I have only about 400 cubic feet, the difference having been eaten by white ants. As you are aware, we have no Teak in depôt and all our wood (Yeggi and Nulla Muddie) is soon attacked by ants when left in depôt for any length of time. This now in depôt has been here three years. I expected to sell the whole before the close of the year to the Irrigation Company for centreing; it is not yet taken, but as I have made arrangements with the Executive Engineer at Ayloor, I expect the whole will be cleared out this month; there is $3,755\frac{8}{12}$ cubic feet of timber to be accounted for, including that in the forests and here.

11. *Timber supplied to Public Departments.*—Timber to the value of Rs. 77-14-0 has been supplied to the Department Public Works, the amount has been included in the accounts and vouchers submitted.

12. *Advances.*—There are no outstanding advances.

13. *Plantations.*—As already reported to you, the Cinchona plants which were alive at the close of the last official year, all died during the hot dry season which followed, and of the second case of plants which I brought with me from Ootacamund in September last, and which I planted on the same spot as the first case were planted, 16 only are now alive, although I have taken every care of them, having carefully watered and shaded them. The hot dry winds commenced very early this year, and we have been very unfortunate in having very large forest fires; for miles and miles all the bamboos died out, and when the fires once set in, the heat caused by the burning of such a large quantity of bamboos was very great. From these causes, the plants suffered severely, but from the precaution I took of burning round the garden they were not killed; they die off one by one—to day, one looks sick, to-morrow it droops, and in a few days it is dead in spite of all our care. I brought 60 plants from Ootacamund, there now remains only 16, and I

think even those will perish. I had each plant shaded as you suggested when you were here in January last, but it seems of little use, and I think it is useless to continue the experiment any longer.

14. *Teak.*—The Teak plants, planted out last year, are doing very indifferently, but are alive; I burnt the grass round them and saved them from the forest fires, but the wood-cutter's cattle got in, and trod down a good many plants, these will spring up again with the rains, and I will put a rough fence round them to keep out cattle in future.

15. *Nursery.*—In the Nursery which I have established in Nundyal for the Collector, I have about 2,000 Dirisana (Acacia Speciosa) and Yapa (Azadireachta Indica) ready for avenue planting, and I am now preparing seed beds for sowing seeds of different kinds, for the Collector requires a great many plants this year for Kurnool and the taluqs, such trees as Tamarind (Tamarindus Indica), Dirisana (Acacca Speciosa), and other Acacias. Yapa (Azadireachta Indica), Mango (Magifera Indica), Teak (Tectona grandis), and in fact all plants that I have tried down here thrive very well, and I think they would do equally well, or better on the Hills could I look after them and keep gardeners there, but that is the difficulty, no one will stay in the forests. Dr. Cleghorn suggested that I should get some of the Hill tribe (Chinchwars) to look after the Chinchonas, but these people will do no work; they will not even carry a gun. I wrote to the Collector asking him to use his influence in trying to get them to water and look after the plants, but it was of no avail; they could not be persuaded to work, although I offered them monthly pay and a reward at the end of the dry season, if they succeeded in keeping the plants alive.

16. *Forest Products.*—This is the first year that we have derived any revenue from minor forest products. The Collector, on my request, was pleased to order that one-eighth of the money for which the fruit of the Tamarind was sold, should be credited to forest revenue from the taluqs bordering the forests for this year, as the farm had been sold, and that for the future the Forest Department themselves should sell the right to collect the fruit of the Tamarind growing in the forest. Some of the Tahsildars have not credited us with our share this year, but these uncredited sums will be brought into next year's account, and included in the amount for which the farm may sell. The amount entered in this year's account is Rupees 137-8-0.

17. I cannot estimate the amount likely to be received next year under this head, because it will depend upon the fruitfulness of the season; sometimes the fruit of this taluq (Nundyal) sells for only a few Rupees, at others for upwards of a 1,000 Rupees. This year it sold for Rupees 1,800, this includes forest and avenue trees; about one-sixth of the trees may be put down as in the forests which the Forest Department will in future rent out; the other four taluqs, bordering the Hills Sirwell, Nunditicotcoor, Cumbum, and Markapoor, together, about equal Nundyal, so that I may hope to collect about 600 Rupees if the season proves favorable for fruit trees, but if unfavorable, not more than one or two hundred.

18. *Grazing dues.*—As you are aware, the grazing dues are at present credited to Imperial revenue, but on the receipt of the proceedings of the Board of Revenue, No. 1947, dated 18th March 1868, I visited the Collector (who happened to be encamped at Nundyal at the time), and spoke to him about the dues, and he was pleased to say that if the money is at present credited to Imperial revenue, he will have no objection to transfer it to Forest revenue; I hope therefore in future this will form an item in our accounts.

19. *Forest prosecutions.*—The prosecution of people smuggling timber from the forest has had the effect of nearly putting a stop to the practice. The amount credited to Government by sale of confiscated wood is only Rupees 844-10-6 this year. This compares favorably with former years, as is shewn by the form below.

List shewing the amount realized by sale of confiscated wood from the year 1863-64 to 1867-68.

Years.	Amount.		
	Rs.	A.	P.
In the year 1863-64...	4,949	1	2
" " " 1864-65...	3,551	6	11
" " " 1865-66...	2,168	1	3
" " " 1866-67...	1,792	13	3
" " " 1867-68...	884	10	6

I have brought most cases of smuggling before the Sub Magistrates, and have generally obtained convictions. The quarterly returns of forest offences submitted to you, show the punishment in each case.

20. *Health of Establishment.*—Fever has been the only sickness to contend with, but it has been very bad, sometimes prostrating half my establishment together, but I am glad to say no death has occurred. Many have left for a time but returned when better; all are most eager to take quinine when they are sick, but the two ounces which I got, when at Madras in July last, has been expended some time, and I have none now to issue. I hope you will allow me a small quantity.

21. No new plants have been found.

22. Our operations are gradually enlarging and the work increasing. During the year, I have taken over charge of the Yella Conda forests, bordering the Nellore District, the range is now very extensive and will occupy nearly the whole of my time in travelling over it, I have closed the forests near Nundyal, to be worked by the department to supply our depôt in Nundyal. Timber has to be floated to Nellore this year as an experiment; a large number of poles will probably be required by the Madras Irrigation Company for Telegraph posts, also a large quantity of timber for lock gates, and immense quantities of charcoal for lime burning, so that I have before me plenty of work marked out and the prospect of a fair year's revenue. I wish I could add the Railway to the list of works to be provided for, but I cannot. We have plenty of firewood jungle, but too far from the line of rail to compete with nearer forests at present, but as fuel becomes scarce in other districts, and when the Canal is open for traffic, we may be able to contribute our share of the Railway supply. At any rate, it is worth bearing in mind that there is a very large supply available here; and that it is within forty miles of Moodanoor station.

Financial Results, vide page 5, paragraph 39.

I have the honor to be, &c.

(Signed) T. SHEFFIELD,

Assistant Conservator of Forests.

APPENDIX H.

No. 18.

ASSISTANT CONSERVATOR'S OFFICE,
CODOOR, 16*th April* 1868.

From

MR H. H. YARDE,
Assistant Conservator of Forests.

To

MAJOR R. H. BEDDOME,
Officiating Conservator of Forests.

SIR,

I have the honor to submit my Annual Report of the North Arcot Range Forest for the official year 1867-68, together with the usual accompaniments.

2. I have had charge of the jungles of Teroomalla in the Chundragherry taluq, Thellay and Arsampett in the Vellore taluq and the forests of Polur throughout the year, with the addition

of that portion of forests in the Vellore taluq, handed over to this department in G. O. No. 2090, dated 6th September 1867.

3. The whole forest range is worked by the License System. The marking of reserved trees has been carried out in such localities as were practicable, but the straggling nature of the forests makes it a difficult operation.

4. In the Chendragherry taluq, there is still a portion of forest known by the name of Samalcona, that it appears advisable to place under the Special Department. It joins our limits, and in consequence great facilities are afforded for clandestine felling. The Monigars of Tripetty issue licenses for the forest tracts under their charge, and if our forests happen to be convenient to the license holder, the timber is felled in our limits. I have an instance of this practice now before the Sub-Magistrate of Tripetty.

5. There is also a tract of forest in the Gooriattum taluq, which I would also recommend be transferred. Its situation is between the Salem and Vellore limits, and in consequence smuggling can be practised without any real fear of detection.

6. As there was sufficient timber in stock in our depôt to meet the few and small requirements made on it, I did not make any addition to our stock of last year, viz., 495 cubic feet and 4 inches.

7. The revenue of this range has considerably increased since the making over of the forests alluded to in para. 2 of this report, and smuggling has become of less occurrence.

8. All licenses for reserved timbers clearly explain to the license holder he is not to fell and convey timber from the forests under three feet in circumference, and that he is not to work the timber up in the forests without paying the higher seignorage and that any infraction of these rules subject him to the confiscation of his timber.

9. Annexed is a Memorandum shewing the amount realized from timber, bamboos, &c.

10. I have had to stop felling in the forest of Thellay in the Vellore Taluq, having observed the exhaustion to a great extent of the large sized trees. I have not, however, restricted the felling of bamboos and firewood, as I considered this material should be thinned to admit an increased supply of air and light for the better growth of the remaining trees, but whatever is done in this direction, no benefit will, it seems, arise as long as cattle are permitted within forest limits. Saplings, as I have often before instanced, being bodily cut down for the mere leaves. We are unable to prevent this destruction occurring to a certain extent.

11. Sales of confiscated timber during the year realized the sum of Rupees 615-5-8, a portion of this amount, Rupees 249-12-5, has been paid to informers and the balance credited in the accounts.

12. Out of the balance of timber remaining on hand at the close of the official year 1866-67, 39 cubic feet and 11 inches of timber was sold to private individuals during the year, realizing Rupees 61-6-0. The balance of timber in stock now is 455 cubic feet 5 inches, valued at Rupees 627-3-4.

13. Ryots have been allowed to remove from the forests for agricultural purposes bamboos and junglewood free of tax. Each ryot requiring timber, &c. for such a purpose has to apply to the Thasildar of his division, for a printed free license for his requirement. This license gets the counter-signature of the local forest Officer in recognition of its acceptance, and the tannah peon through whose tannah the bandies will have to pass dockets it. The number of licenses thus issued has been as follows:—

Junglewood, 152 bandies, value.....		Rupees	152
Bamboos, 212.	do. do.	,,	106

The value of this, together with about 21,600 head loads of fuel is not credited in our accounts.

14. I beg to state that many cases for breach and infraction of forest rules were disposed of by the Magistrates of the district. I regret to observe a peon was implicated in the matter of forging a voucher issued by the Tahsildar of three bandy loads of bamboos. He was detected by my Overseer, and was tried by the Sub-Magistrate of Vellore, together with the voucher holder, who were committed to the Sessions The subject of the forgery was finally disposed of by Mr. Irvine, late Session Judge of Chittoor. The peon with the voucher holder got each a year's rigorous imprisonment. During the year another peon was dismissed for disobedience.

15. I have received great assistance from the Revenue Officers generally.

16. Health of Establishment has, on the whole, been well, a few cases of fever only having occurred.

17. *Plantation.*—In September last an experimental plantation at Ammerdy was commenced. The seeds sown chiefly were the Cassia florida, Cassia Roxburghia, Cassia fistula and Casuarina. The Cassia florida is very fast growing and well worthy of trial where rapid growth is wanted. The heart-wood is, I believe, almost black, like ebony. Seeds of sandalwood, Red Saunders, Wild Mangoe and Murtha (Terminalia) have also been tried on a small scale. The whole, it is satisfactory to mention, germinated, but on transfer to wicker baskets, many casualties have occurred. The mangoe plants have been put out, but in consequence of the season, I have suspended further operations in this direction. The nursery may be estimated to contain 8,000 plants of different kinds.

Trivellum plantation.—I took charge of this plantation from the Collector, Mr. Robinson, on the 1st January last, and I am glad to report the well doing of the same. The plantation is situated on the banks of the Palar river, and near to the junction of this river and the Poiney, and close to the Railway viaduct of Thrivellum.

One hundred cawnies of ground are planted out, the number of plants in each cawnie being about 200. In the nursery we have about 20,000 more plants, which are ready for planting out when the season is favourable.

Fifty seed beds were laid lately, and the seeds are now germinating. I intend making more beds, so as to have enough plants on hand for casualties and for planting the ground lately bought at a cost of Rupees 861-10-9 for extending the plantation.

My Overseer, Mr. Brougham, submitted a report of his having detected a grub similar to the Coffee borer. I ordered the same to be sent to you, and directed the plantation to be watched for the purpose of ascertaining if there were any more, but no more have been seen. There are beetles just now appearing on the plantation; large plants are attacked by them and get ringed round the stem, while nursery plants are completely bitten off.

Financial results, vide page 6, paragraph 49.

I have the honor to be, &c.

(Signed) H. H. YARDE,
Assistant Conservator of Forests.

APPENDIX I.

SOUTH ARCOT,
DEPUTY CONSERVATOR'S OFFICE,
SALEM, 23*rd April* 1868.

From

LIEUTENANT C. J. WALKER,
Deputy Conservator of Forests, Salem and South Arcot.

To

MAJOR R. H. BEDDOME,
Officiating Conservator of Forests.

SIR,

Introductory remarks. I have the honor to submit the Annual Administration Report of the South Arcot Forests under my charge for the past official year.

These forests have been under the charge of P. Rungiah Naidu throughout the year. He has performed his duties most carefully and given every satisfaction, and what is most important, has gained the confidence of the Divisional (Land Revenue) Officers.

Measures taken for extending and improving forests.

2. Conservancy has been the main object in this range. The License and Voucher System has been partially abandoned, and a small depôt formed at Chenguma, whence the department supply the local requirements. It is most important that the forests remaining on the eastern slopes of the Javadis be carefully reserved, as they have been all but denuded to supply the wants of this district; and I have given strict orders that no timber, except such as is really necessary for the local market, be felled and supplied. Merchants from Pondicherry and other towns on the Sea Coast, must meanwhile receive their supplies from other sources. The forest tracts in the Kullacoorchy Taluq have been inspected, and measures for more effectual conservancy adopted. Felling of timber, &c. on the hill slopes on passes granted by the Poligars, contractors has been put a stop to, pending a definite settlement of the boundary. These contractors formerly realized a fixed annual payment from Government ryots in the plains for the right of removal of all wood, bamboos, leaves, &c. for agricultural purposes. At the request of the Collector and Acting Head Assistant, I inspected and reported on certain jungle blocks, referred to in Board's Proceedings, No. 6517, dated 10th October 1867. If the plans proposed are carried out, it will, I think, be expedient to extend Imperial conservancy in this district, at least to the large firewood tracts around Gingee, Tindivanum taluq, and the formation of large plantations seems very desirable.

Quantity of Timber felled.

3. Six hundered and thirty-two cubic feet of timber were stored in timber yard at Chengum, as an experimental measure.

Carriage.

4. Carriage was readily procured in the local market.

Seignorage.

5. The amount realized on seignorage exceeds that of last year by Rupees 934-8-0, which is favourable. The number of bandy and head loads removed from the forests is shewn in Statement A.

Confiscated timber.

6. The amount realized by sale of confiscated timber, amounts to Rupees 341-11-0, as exhibited in accompanying statement, marked B. Clandestine felling is still carried on, although I think it has much abated in consequence of vigilant supervision and adequate punishment of offenders on detection and proof.

Timber sold.

7. 540 cubic feet of timber, principally Dinduga *(Conocarpus Latifolia)*, called here Nummai, were sold by auction in February, and realized an average rate of annas eight per cubic foot, which is very low, but the felling rate is also lower than in other ranges under my charge, and the result on the whole is more remunerative and much more satisfactory than the License and Voucher System.

Timber supplied to Public Departments.

8. No timber has been supplied to Public Departments.

Out-standing advances.

9. None.

Plantation.

10. No plantations have as yet been commenced, and I am glad of it, considering the dryness of the season. I propose forming a nursery on some lands adjoining the Forest Office at Chengum, which will be under constant supervision by the Overseer.

Forest products.

11. The forest products of this range are few, and do not call for special remark.

Criminal prosecutions.

12. Criminal prosecutions have, on the whole, been satisfactory, though from the limited establishment employed for the detection of offenders has in many cases been found impossible.

Health of Establishment.

13. The health of the establishment has been exceptionally good.

Plants discovered

14 No new plants have been discovered.

Summary of operations.

15. I have carefully inspected the tracts under conservancy along with the Divisional Officer, and have particularly called his attention to the clearing of valuable forest or jungle lands for cultivation, without reference, and often on the authority of a Cultivation Inspector. I have also addressed the Collector on this subject, and have received every assistance from the local authorities in this and similar matters.

In Kullacoorchy Taluq, I found that our rules were but little known and generally disregarded; the Poligars' contractors representing that *all* the forest and jungle had been let by the Poligars to them. Measures have been adopted to put a stop to this state of things, so detrimental to true conservancy. I am now in communication with the Collector as to the settlement of definite boundaries between the Government and Poligars' jungles, and the more general extention of forest conservancy measures in this and other taluqs.

Financial results.

16 The *financial* results are shewn in page 7, paragraph 56 Pay of the Deputy Conservator for two months having been drawn in South Arcot, swells the debit side, as also the transfer of the subordinate establishment authorized in Government Order No. 2515, dated 25th October 1867. It is but fair that these forests should pay a percentage of the salary of the Supervising Officer and the whole of the actual establishment employed, and I think, considering the manner in which they have been neglected for years, it will be sufficient if the expenditure is covered by the income for several years. The actual receipts amount to Rupees 4,310-3-3, which with timber in stock valued at Rupees 44, gives a surplus of Rupees 1,353-10-3 over the income of 1866-67, which is satisfactory, especially as it has been derived at a time when we are limiting felling of timber to the lowest quantity compatible with actual wants.

The re-establishment of a seignorage on bamboos has of course greatly helped in the realizing of so favourable a revenue.

Financial Results, vide page 7, paragraph 56.

I have the honor to be, &c.,

(Signed) C J. WALKER, LIEUT.,

Deputy Conservator of Forests.

A.

Statement shewing the quantity and description of Timber, &c. removed from the South Arcot Forests on License or Tickets, during the year 1867-68.

	BANDY LOADS									HEAD LOADS								
	Timber.				Firewood.													
	1st Class.	2nd Class.	3rd Class	Total of Bandy loads.	Firewood.	Bamboos.	Bark.	Charcoal.	Total of bandy loads of Fire wood	Grand total of bandy loads.	Junglewood.	Karungali and Satinwood.	Total of head loads of timber.	Bamboos.	Bark	Charcoal.	Total of head loads of timber.	Grand total of head loads.
South Arcot	166	477	894	1,537	814	28	612	1	1,455	2,992	488	74	562	4,064	...	1,642	5,706	6,268
Total...	166	477	894	1,537	814	28	612	1	1,455	2,992	488	74	562	4,064	...	1,642	5,706	6,268

B.

SOUTH ARCOT.

Abstract of the Statement of Timber, &c., confiscated and sold during the year 1867-68.

Description.			Amount realized.			Amount credited.			Amount distributed as rewards.		
Teak, Atcha, Vengai and Kurungali wood, and Karum timber	19½	...	Rs. 192	A. 0	P. 0	Rs. 101	A. 15	P. 0	Rs. 52	A. 2	P. 0
Auramai, Vemboo, Madrai and Kala Madrai ...	18½	...	101	6	6	78	10	3	21	10	0
Jungle and firewood	21½	...	39	7	0	33	6	9	6	0	3
Bamboos	3½	1	7	14	9	6	0	9	1	14	0
Charcoal	...	6	0	15	0	0	14	6	0	0	6
	63	7	341	11	0	220	15	3	81	10	9

C.

Statement shewing the Free Passes issued during the year 1867-68.

Range.	Number of Free Passes.	Number of Bandy loads of Junglewood.	Number of Bandy loads of Bamboos.	Remarks.
South Arcot.....	113	141¾	53	
Total.....	113	141¾	53	

Deputy Conservator's Office,
Camp Salem. 29*th April* 1868.

(Signed) C. J. WALKER, Lieutenant,
Deputy Conservator of Forests.

APPENDICES K. and L.

Madura, 9*th May* 1868.

From

Mr. T. N. TURNBULL,
Sub Assistant Conservator of Forests.

To

Major R. H. BEDDOME,
Conservator of Forests.

Sir,

I have the honor to submit my Annual Report on the forests under my charge in the districts of Madura and Tinnevelly, for the official year 1867-68.

2. At the close of the last year, there was a sum of Rupees 950-4-7 remaining unexpended. This amount, from the Account Current accompanying, you will observe has been regularly brought forward. Out of the Budget Allotment of Rupees 4,000, inclusive of the Rupees 500 transferred to the Madura range in Government Order No. 755, dated 24th March 1868, Rupees 3,650 have been drawn by cheques, making a total of Rupees 4,600-4-7 to be accounted for. Out of this sum, Rupees 4,388 have been expended in the felling and carting of timber to depôt leaving a balance of Rupees 212-4-7 as cash in hand at the close of the year.

3. The Budget Allotment of Rupees 200 for the Tinnevelly range has been entirely expended as particularized in the Account Current.

4. Out of Rupees 200 sanctioned for the Madura range for Office contingencies, Rupees 67-3 have been expended and adjusted by monthly bills. For Tinnevelly, Rupees 50 was the amount sanctioned and expended under this head.

5. The seignorage collections in the Madura range, for the year under review, have been Rupees 4,886-1. The pay of Establishment Rupees 3,249, leaving a balance in favor of Government of Rupees 1,637. In Tinnevelly we have collected Rupees 8,155-15-2. Expenditure for Establishment has been Rupees 1,005, leaving a balance in Government favor of Rupees 7,150-15-2.

6. To our stock of timber on hand at the close of the last official year, valued at Rupees 3,242, we have made a further addition during the past year, valued at Rupees 4,182-6. I have been able to shew a very small amount realized this year by sale of timber from depôt. Had the whole of the timber sold been paid for before the expiration of the year, the Madura range would have shewn a very large balance in favor of Government, but at present the charges for felling and carting swell our expenditure, while the profits will pass into the accounts of the next year.

7 All parties detected felling in smuggling timber from, or destroying Government forests for cultivation without previously obtaining permission were prosecuted.

8. For the success attending prosecutions in the Tinnevelly range, I am indebted to Duffadars Kylasavier and Allaghiri Row for the ready manner in which they have carried out my instructions, and the zeal, discretion and energy they have evinced in the several duties assigned to them. The Tahsildars also report very favorably of them, and I would beg to record my recommendation for an increase to their salaries.

9. This year has been unusually unhealthy. The whole of the establishment of the Madura district have been more or less laid up with fever. The Cumbum Valley is the only unhealthy locality, and consequently, I have had to make continual transfers. I have myself been laid up repeatedly with severe attacks of ague and fever, the former presenting itself frequently as well as severely, laid me up in the month of October with congestion of the liver.

10. The establishments of both ranges have worked well, and my Writer has continued to afford satisfaction in his duties.

11. Since the organization of the department in the Madura District in 1860, there has been a continued drain on the forests to meet local demands. Notwithstanding that, certain tracts have been allowed rest for renovation, we find timber trees, I allude to Teak and Vengay, becoming scarce, and merchants and the Public Works Department seriously inconvenienced to obtain timber of large scantling. It therefore becomes almost compulsory to close our forests to the public and leave them to meet their requirements from adjoining Zemindary tracts. This restriction, I would strongly advocate being confined to our reserved timber list, for if we extended the prohibition to junglewood as well, we would encroach on the rights and privileges conceded to villagers and others, which would be impolitic. The local demand for timbers on our reserved list may probably be greater than the supply, the almost impoverished forests of the Zemindaries can meet with, and to obviate this difficulty, we might advance a step which would be remunerative to Government.

12. Along the confines of the Travancore territory there is much full grown Teak, Vengay, and Blackwood trees, which can never be utilized by the Travancore Government, and I would suggest that permission be obtained for the felling of all these valuable trees on the stumpfee system, *i. e.* a fee payable, say of 4 Rupees for each tree felled in that territory.

13. Some years ago the Travancore Government felled a large number of these trees, and they are now to be found lying there, charred and in danger of being burnt at every forest conflagration. In communication with the Resident of Travancore, and with reference to paragraph 3 of Dr. Cleghorn's letter, No. 1758, dated 15th April 1866, I have been able to arrange for the purchase

of all this fine Teak and Blackwood at Rupees 5 per beam and Rupees 1 per plank, which is a very moderate rate, as I will shew.

14. Supposing each beam at the lowest estimate to contain 15 cubic feet, at the above rate, a foot would cost a little more than 5 annas, and we would be able to realize a clear profit of 6 annas or more, as I have already been able to dispose of a small quantity at the rate of 12 annas per foot without any expenditure to the Government. The same with regard to the planks.

15. Thus by adopting the above suggestion, we will be enabled to perform the work for which the department was truly intended, viz., the conservancy of forests, the securing provision for the future.

16. Again I would solicit your attention to that magnificent belt of forest at the foot of the hills in the Cumbum Valley, and enquire whether systematic attempts cannot be made to utilize all this local-growth timber as much as possible, instead of employing Teak and Vengay? If careful experiments were made, and the results published, and the Public Works Department instructed to use timbers tried and approved of, we would be able to obtain valuable tracts regarding trees now neglected, and I think the natives would readily follow the example set to them.

17. The forest establishment of the North Tinnevelly range is as under :—

3 Duffadars	at Rupees 15.....	45
10 Peons .	at Rupees 6.....	60
	Rupees...	105

which was sanctioned in G. O. No. 1702, dated 26th July 1867 : a few more peons for this portion is still needed.

Financial results of Madura and Tinnevelly forests, vide pages 8 and 9 and paragraphs 61 and 66.

I have, &c.

(Signed) T. N. TURNBULL,
Sub-Assistant Conservator of Forests.

APPENDIX M.

CAMP POLACHY, 21*st April* 1868.

From

LIEUTENANT H. M. GOSLING,
Deputy Conservator of Forests, Anamallay Range.

To

MAJOR R. H. BEDDOME,
Officiating Conservator of Forests.

SIR,

In accordance with established form, I have the honor to submit for your information the Annual report on the several forests comprising the range under my charge.

Subjects requiring settlement at the commencement of last year.

2. The subjects to be entered upon at the commencement of last year were as follows :—

a. The formation of a fuel reserve for the Madras Railway Company at Walliar.

b. The development of the License and Voucher system in the taluqs of Coimbatore, Polachy, and Oodamalpattah.

c. The renewal of the lease of the Teak forest tracts adjoining the Government forests proper on the Anamallais from the Numboody of Colongode.

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d. Resumption of the Teak forests in the Ponachy valley leased to Mr. R. J. Lowry.

e. Construction of a cart road up to the forest above ghaut on the Anamallais, thereby economizing time, labor, and expense.

f. Repair of the road leading from the foot of the timber slip to the floating depôt at Mungara.

g. Rapid conveyance of the accumulation of four years' timber in the depôts above and below ghaut to the coast at Ponany for delivery to the Bombay Marine Department.

h. Recovery of outstanding advances of *former* years, amounting to Rupees 5,542-8-10.

i. Settlement of the claim preferred by Parsee Meerwanjee to 300 acres of valuable forest land in the Bolumputty forest.

j. Settlement of the claim made by Ramasawmy Moodeliar to the site of the Government timber depôt at the foot of the Anamallai slip.

k. Survey and examination of forests little known.

l. Demarcation of the reserved Government forests.

3. The subjects from A. to I. have been disposed of, the settlement of the remainder without active Government interposition will, I fear, be indefinitely delayed, and I trust that the presence of Doctor Brandis in this Presidency may be taken advantage of in promptly bringing them before Government. As has been repeatedly observed, owing to the forests in this range being contiguous to a Native State, and intersected with private and Davastanum forests, render it most needful that a definite boundary line be immediately laid down, without which the calculations of revenue to be derived from them would be extremely vague. The presence of a large Revenue Survey party in this district should be urged upon Government, as presenting a favorable opportunity for this work being forthwith commenced.

Subjects from I. to L. require active interposition of Government for prompt settlement.

Services of Revenue Survey party might be availed of.

Ramasawmy Moodelliar's claim to the land at the foot of the timber slip is now before the Collector, on whom I have urged the importance of a speedy settlement of this long-deferred subject.

Ramasawmy Moodelliar's claim unsettled.

Review.

4. I now review *seriatim* the operations of the past year, under the heading in paragraph 2 of this report :

a. The possession of a compact block of forest land at Walliar for a fuel reserve was not obtained without considerable difficulty, the question had to be approached with caution, lest an exorbitant price should have been demanded for the land, but the tact of Mr. Grant, the late Collector, procured 970 acres for the comparatively small sum of 1,180 Rupees : a full description of this block is contained in the Report on the Bolumputty forests.

Fuel reserve at Walliar.

b. The introduction of the License and Voucher system into the Coimbatore Taluq in 1866 has been followed this year in the taluqs of Polachy and Oodamulpattah. The chain of conservancy is thus complete between the Neilgherries and the Pulney Hills. From the 1st of April this year, the management will be undertaken by the Forest Department, for which purpose the Government have sanctioned an increase to the establishment of 1 Overseer, 2 Goomastahs, 2 Duffadars, and 11 Peons. I anticipate most satisfactory results both in revenue and conservancy during the ensuing year in consequence. The demand from Bombay for teak has of late years been so precarious, that I am most anxious to secure this range from annual deficits in future by establishing the License and Voucher system on a solid basis, so as to form the staple source of revenue in

Chain of conservancy completed with Madura.

Increase sanctioned of establishment.

Staple source of revenue in future.

this range, covering the cost of establishment and working, leaving the sales of teak and rosewood a *clear profit* to Government.

c. The execution of the Lease deed for the renewal of the forest tracts belonging to the Numbiddy of Colungode was delayed from various causes. External influences were brought to bear upon the owner to induce him to refuse his consent, but fortunately the Collector of Malabar, Mr. Ballard, was able to make him discern that his true interests lay in closing with the Government offer, which was, that in consideration of receiving an advance of Rupees 30,000 as stump-fee, and in future a stump-fee of 6 Rupees, on the adjustment of the advance now received, he should lease the forest to the Government for a period of 99 years. The importance of this acquisition cannot be too highly estimated, since throughout the whole chain of the western ghats is nowhere to be found a tract in which teak of such magnificent dimensions exist, and whence timber of the scantling required for naval purposes can be procured. The successful promptitude with which the negociations have been conducted cannot be too highly commended.

Renewal of lease with Numbiddy of Colungode for 99 years.

Success of negotiations due to Mr. Ballard.

d. On the 17th of June 1865, an agreement was entered into with Mr. R. J. Lowry, then opening out a Coffee Plantation on the Anamallais, permitting him to fell Teak and Rosewood in the valley below his estate, on payment of a seignorage of two annas per cubic foot, *no higher rate* being obtainable. 255 Teak sleepers, containing 1,704 cubic feet and 11 Rosewood logs, containing 133 cubic feet, have been slipped and removed by him. The seignorage charged thereon being Rupees 230-8-11. About 227 sleepers and 50 round logs of teak, containing 3,283 cubic feet have been discovered in the long grass above ghaut, and an Overseer is up in the valley at this moment, searching for and clearing individual logs and sleepers, whose report will be sent in when received. In the year 1867, Mr. Lowry desired to form a Company to work this forest, and addressed Dr. Cleghorn on the subject, but the Government declined to relax the *special* condition of *personal* supervision on which the lease was granted, and offered him, in consideration of the timber felled and relinquishment of the lease, the sum Rupees 5,000, the timber in question becoming the property of Government, which offer Mr. Lowry accepted on the 28th of February 1868. Thus two valuable forests in the vicinity of each other have been acquired by Government and placed under conservancy in this range within the year under review.

Resumption of Ponachy Teak forest from Mr. R. J. Lowry.

e. The question of constructing a cart road up to the forests above ghaut on the Anamallais has long been under consideration. But the extravagant estimates submitted have deterred the Government from sanctioning the project. I have been encouraged to renew the proposal from the economical manner in which I have been able to construct two roads in this range, with *personal* supervision, and I have no doubt that I shall be able to construct the ghaut road as cheaply, the execution of which would altogether alter the conditions of residence and service on the Anamallais, and the following important objects gained, viz., first, an uninterrupted communication between the depôts in the forests above ghaut with Mangarah, so that carts once loaded in the forests would not require unloading until they reached the floating depôts. Second, labour would be more easily obtained, since contractors, cartmen and others, who are now deterred by fear of a lengthened residence in the forest, would readily come up to work when the means of ascent and descent were rendered easier. Third, elephant labor would not be required for slipping, and could be applied to its legitimate use of dragging in outlying and felled timber to the depôts and road side. Fourth, a market would be obtained for the sale of the second class trees and bamboos, the sale of which by license would, within one year, cover the cost of the construction of the ghaut, and be a perpetual source of revenue hereafter. Teak plantations would be opened out in room of the bamboo forests removed, which would rapidly exceed the Nellumboor plantations in value, for the conditions of the soil, temperature and climate are exactly similar to the adjoining tract leased from the Namboody, the renewal of

Cart road recommended up to the forest on the Anamallais.

Advantages resulting from proposed cart road.

Future importance of the Anamallai forest as a site for plantations of teak.

whose lease, combined with the above reasons, serve to press the importance and necessity for a more feasible access to the Anamallais being forthwith commenced.

Repair of road Adivarum to Mungarah.

f. The repair of the road leading from the foot of the timber slip to the floating depôt at Mungara was executed for a sum of 900 Rupees in two months and a half, under the superintendence of Mr. Overseer Thistlethwaite.

Rapid removal of timber.

g. 1,012 logs and planks were removed from the depôts in the interior of the forests to the head of the slip by the *agency of the new cart establishment*, and 1,063 logs and planks from foot of the slip to Mungara *by contract*. No slipping has taken place, owing to the mortality among the elephants.

Reduction of outstanding advances.

h. The outstanding advances of *former* years have been reduced to Rupees 4,070-10-0. Vigorous prosecutions will be carried on during the ensuing year. I do not recommend any sums being witten off to profit and loss.

i. The claim preferred by Parsee Marwanjee to the rosewood on his 300 acres in the Bolumputty forests was admitted by Government in their Proceedings No. 498, dated 22nd February 1868, and the same handed over to him.

Operations during the south-west monsoon on the Anamallais.

5. The operations during the past working seasons in the Anamallais forests, were confined to the removal of timber felled in *previous* years. The new cart establishment proved extremely useful. No contractors could be persuaded to come up to the forest, so the whole of the work was performed by Government agency. No felling took place. Sickness was very prevalent, five of the subordinates died from fever. I attribute the generally favorable state of health of the establishment, however, to the excellent care bestowed by Hospital Assistant T. Sabapathy Pillay, No. 691, on his patients, and his successful treatment of fever cases with the new alkaloids. The mortality among the elephants is attributable to several causes, viz., change of diet from rice to paddy, reducing their strength, worms, sun-stroke, and debility after parturition. The absence of a qualified person to treat them when sick was much felt, a Fouzdar was by order of Government transferred from the Commissariat to this department, and joined on the 16th February 1868. The elephants are now under his charge. The worms resembled the description given of those found in the intestines of the elephant that died in Burmah last year. The calves perished for want of milk, although every effort was made by administering the medicines which a local Hakeem could supply, and by placing them on increased food, to induce a flow of milk in the mothers. Breeding of elephants at daily work is most injurious to their constitution, rendering them unfit for work, three months prior and subsequent to confinement, and debilitating them to a degree often proving fatal.

Causes of mortality among the elephants.

Fouzdar appointed.

Financial results.

First year of surplus in the Bolumputty, &c. forests.

Future prospects.

6. The financial results of the past year are exhibited in page 11, paragraph 81. This is the *first*, for several years, that the revenue has *exceeded* the charge in the Anamallais, and the *first year* that the forests of the Coimbatore belt have exhibited a *surplus*. From this year may be also dated the establishment of the License and Voucher system on a satisfactory foundation, and the completion of the chain of conservancy with Madura. The future prospects are very satisfactory. The whole of the timber lying in the several depôts amounting to Rupees 1,90,956, has been disposed of to the Bombay Marine, and will occupy us till the end of 1869, in removal. Upwards of 7,000 cubic feet of rosewood has to be supplied to the Madras Gun Carriage Manufactory, 100 logs of Teak to the Bombay Gun Carriage Manufactory, and specimen logs of *all our second class trees* to the Bombay Marine. I have spared no pains in bringing these woods

to public notice, and trust that a demand will spring up for them in the Bombay and Madras markets. From the statement of financial results for 11 years of the several forests in this Presidency, drawn up by Dr. Cleghorn, a balance appears against the Anamallais in the years 1858, 1861, 62, 64, 65 and 66, ranging from Rupees 7,096 to Rupees 33,764. This arose simply from the Public Departments not obtaining their timber from us, and for the removal of the demand from Bombay, this annual deficit would have continued. At present the D. P. W. and G. C. M. spend large sums of cash in the purchase of timber in the market which could as easily be obtained from us on *receipts in duplicate*. The Government maintain at a great expense our special department, for the purposes of conservancy and supply of timber to these very departments. This anomalous state of affairs would be at once rectified by the Government forbidding the expenditure of public funds by the above departments in the purchase of any timber in the market, which could not absolutely be supplied by the forest department. There are few ranges in the Presidency that could not meet the demands of the above departments, and yet how seldom do they resort to them? Within the past eighteen months, although extensive works have been carried, I have had but a requisition for fifteen logs of Teak from the D. P. W. in this district. The Madras Gun Carriage Manufactory, after extensively advertising and reporting to Government their inability to procure rosewood, only as a last resource applied to the forest department. Expenditure of the public funds is incurred by *three* departments at present on account of timber, whereas it should be confined to the Forest Department alone. Were the plan now advocated, adopted, a very great saving would be effected to Government, the abovementioned departments would have a ready supply of seasoned timber always at hand; and all losses from accumulation of timber, by fires, white ants, and exposure prevented. All that is required to ensure a rapid supply to the above departments is an annual estimate of their probable demands for the ensuing year furnished to the Officer from whose range the particular timber is required. Conservancy and revenue would thus be both attained, and a considerable saving effected.

Annual deficits a misnomer.

How deficits may be avoided in future.

Cash paid for timber at present by three departments instead of one.

7. Mr. Truter's failing health compelled him to leave the department, and I appointed Mr. Story to succeed him. Assistant Overseer Mootoosawmy has been transferred from Anamallay to Bolumputty, and in his room I have appointed a Mussalman named Sheffie Khan. These appointments were *carefully* made with reference to the *special* qualifications required for each post. Mr. Story had been for seven years in the Traffic Department of the Madras Railway Company, and this training aptly fitted him for the Head Overseership of the Anamalla Range, a post of responsibility, and requiring a person of methodical business habits, and in whom confidence could be reposed. Overseer Mootoosawmy has been 17 years in the department, and his experience and long service qualified him for promotion. I have consequently promoted him to the charge of the Bolumputty forests. The introduction of the License and Voucher system in the Polachy and Oodamulpattah taluqs required the superintendence of a person of active habits, intelligent character, detective ability and thorough acquaintance with the good and bad characters of the district. Sheffie Khan, Head Constable at Anamallay, not only possessed these qualifications, but combined with them an excellent knowledge of English. He was consequently appointed.

Changes among subordinates.

Mr. Story.

Appointments made with reference to special qualifications required for each post.

Assistant Overseer Mootoosawmy Pillay promoted. Reasons assigned.

Selection of Assistant Overseer Sheffie Khan, why?

8. As remarked to me lately by an eminently qualified judge "the Forest Department" is still in its infancy, and it is difficult to foretell to what dimensions it may extend or to estimate the establishment that may be required in future years for the demands of conservancy. This is already exemplified in many ranges of this Presidency, but in none more so than in this, where, from the working of a single small tract of teak forest on the Anamallais, the operations have extended within the past year into the adjacent forests in the Coimbatore belt, and embrace the low-land forests from the Bhowany river

Rapid extension of conservancy.

to the borders of Madura. While personally attending to the working of the Anamallai forests, I have necessarily been obliged to entrust to Mr. Overseer Lloyd at Palghaut, the superintendence of operations in these forests, which he has carefully, economically and faithfully performed, proving aptitude for independent charges. Although an extra Overseer has been appointed at Bolumputty, Mr. Lloyd will not cease to exercise a general superintendence over that forest, as hitherto, in addition to his other duties.

Credit due to Mr. Lloyd.

9. Financial Results, vide page 9, paragraph 83.

I have the honor to be, &c.,

(Signed) H. M. GOSLING, LIEUT.,
Deputy Conservator of Forests,
Anamallai Range.

APPENDIX N.

CAMP BOLAMPUTTY,
1*st April* 1868.

From

MR. J. E. LLOYD,
Overseer in charge of Bolumputty, Paulghat.

To

LIEUTENANT H. M. GOSLING,
Deputy Conservator of Forests, Anamallai.

SIR,

1. I beg to forward my Annual Report of the Chennat Nair, Sholakurray and Bolumputty forests.

2. The Chennat Nair forest is situated in the Paulghat Taluq and the Establishment consists of 2 peons. The work performed for this year is as follows :—

Chennat Nair forests.

A. 69 log of Rosewood felled for the Bombay Gun Carriage and 13 logs of jungle wood for Messrs. Deschamps and Co., of Madras.

Timber felled.

B. 29 Rosewood logs were floated from the forest to Palghaut, 39 from Perly to Luckady, and 37 from Tirroor to Ponany. Total 105 logs.

Timber floated.

C. 44 Rosewood logs and planks were carted by contract from the forest to Perly at the rate of Rupees 4 per log, 32 logs of large size from the forest to Paulghat, including 13 logs of junglewood of large size were removed by Government carts, from the forest to Paulghat station.

Timber carted.

D. 105 logs of Rosewood and 21 logs of junglewood were dragged by the Government elephants to foot of ghaut.

Elephant labor.

E. Of the above mentioned timber, 105 logs of Rosewood were conveyed by Rail to Tirroor station from the Paulghat and Luckady station, and floated thence to Ponany for the Bombay Gun Carriage. The 13 logs of junglewood were sent by Rail to Madras from Paulghat station for Messrs. Deschamps and Co.

Timber sent by Train.

F. The greatest difficulty is experienced in not having a road from the Chennat Nair forest to Paulghat. The existing track is impassable, even for timber of 15 cubic feet. The wooden bridges are in a state of disrepair and dangerous for carts to pass over, owing to which the

State of road.

cart drivers refuse working on the roads, when I am not present, stating that it is dangerous to themselves and bullocks. This is quite true, and it is only with the greatest caution, that carting is carried on. Very little outlay will serve to put it in repair, and I beg to request that you will be good enough to recommend the same for the consideration of the Conservator of Forests.

G. I regret to state that the seignorage of this forest amounts to only Rupees 1,498-12-6: this is owing to the numerous private forests in the vicinity, which being closer to Paulghat, and

Seignorage.

the seignorage levied on them less than the Government rates, induce merchants and others to procure their timber from these forests in preference to the Government forests. The wholesale manner in which the private forests are being worked must in less than three years denude them of all timber, and eventually compel the merchants to fall back on the Government forests.

3. *Sholakurry forests.*—This forest is situated in the Coimbatore district and the

Sholakurry forests.

Establishment consists of one peon. The work performed for this year is as follows :—

Timber felled.

A. 100 logs of Rosewood were felled for the Madras Gun Carriage Manufactory.

B. 34 logs were carted to the Walliar station, and thence conveyed by Rail to Madras,

Timber carted and sent by Train.

for the M. G. C. M., and 16 logs to the Paulghaut station, whence they were conveyed by Rail to Tirroor, and floated thence to Ponany for the Bombay G. C. M. All these logs were conveyed by Government carts from the forest to the station.

Elephant labour.

C. 34 logs of Rosewood were slipped to the foot of the ghaut; but on account of the feverish season commencing, the works were stopped.

D. In addition to the above, the Superintendent in charge of the Central Jail at Coimbatore, was supplied with 4 logs of Teak, 5 logs of Rosewood, 5 logs

Timber supplied.

of Vengay, and one log of Junglewood. The Bombay G. C. M., 29 logs of Teak from the depôt at that place.

E. The state of the roads in this forest resembles those in the Chennat Nair above alluded to, and as scantlings of very large size have to be removed

Road.

this year, I beg to suggest that their repair be at once commenced.

4. I met the Tahsildar of Coimbatore at Walliar, on the 27th March 1868, and he directed the Accountant and Moneagar to hand over the land

Walliar fuel reserve.

recently purchased for a fuel reserve, to me.

5. The total amount of land taken over by me, measures 963-8-3 acres. It is bounded on the north by the Thenkurdu hills, on the south by the Railway

Boundaries.

line, on the east by the Rumboy Thowtee Sholay, and on the west by the Althe Kundee river.

6. The general appearance of the land is rather bare, as a great portion of it is cleared under cultivation, except in a few places wherein which the trees are

Appearance of reserve.

plentiful. The average size of the trees is from 6 to 12 inches in circumference, and if properly reserved, will in four years be fit to be cut.

7. Fencing and trenches are required on the eastern and western side marked in the plan; for on the south side, there is already the Railway line and

Fencing and trenching

fence, and on the north the range of the Sholakurry hills. These I think will be sufficient to keep out cattle and people from trespassing.

The proper time for commencing the fence and trench round the reserve will be about the beginning of the monsoon, as it is difficult to procure coolies to work in this feverish season. Besides, if men were procured, owing to the want of rain, the ground is too hard for working ; consequently, there would be more money expended than work performed, for it would take four men to do the work at present, which one man could do after the rains had set in.

8. Large pieces of this land were under cultivation. I beg to suggest that it be ploughed (which can be done by Government bullocks,) and sown with the Acacia Arabica, or Kurru Vallum, or with any other kind of quick growing tree. These seeds can be got, if applied for, to Lieutenant Walker, and this can be done at the same time as the fencing is put up.

Acacia Arabica

9. In going through the forest, I was surprised to see the number of Teak saplings. These, I regret to state, are choked with creepers and brambles, and I beg to suggest, that they should be cleared, and the lower branches lopped to allow the tree more space. The cost will probably not amount to more than one anna a tree, for clearing and lopping, and the branches alone will pay that when collected and stacked for fuel, or sold by public auction.

Teak saplings

10. To work this reserve systematically, I beg to suggest that it should be divided into blocks, 2 blocks to be in charge of a peon, so that each peon can estimate the exact amount of fuel and teak saplings, &c., there are in each block, and enter it in his register book. He should visit his blocks twice a day, to see that no cattle or people enter, and also that the embankment hedge and ditch is not in any places destroyed. As these men must live on the spot, three huts should be erected for them, so that they will have no excuse whatever to leave the place. The establishment should consist of two Peons and one Duffadar for the present.

Systematic way of working

11. *Bolumputty forests.*—This forest is worked at present under the License and Voucher system, and from the accounts received, I am glad to state that the revenue has materially increased, but it would be doubled if properly supervised. Very considerable depredations have heretofore been committed in this forest, which will now receive a check from the increase of establishment recently sanctioned. Parsee Marwanjee's rosewood having been decided by Government to belong to him, has been handed over. I have ascertained that the rosewood was growing within the limits of his puttah.

Bolumputty forests.

12. *Summary*—In the Chennat Nair forests all the ripe Teak, Rosewood, Vengay, Irul and Kurru Murdu, is exhausted, and no felling should be carried on for at least five years. This forest before being handed over to the department was leased to Mr. Tomlinson of Paulghat for some seven or eight years, who has cleared it of all the ripe Teak and Rosewood, subsequently the Railway Company obtained the lease for a couple of years, and cleared it of all the ripe Vengay, Irul and Kurru Murdu. The only supply we can get from this forest now is junglewood and bamboos.

From the Sholakurray forest, Teak and Vengay of any size and quantity can be had, but of Rosewood only a small supply exists, and that even but of small scantling.

From the Bolumputty forest, rosewood in any quantity can be obtained and of large scantling. The second class timber, however, is rather scarce. Teak is very poor on these hills.

Fever has been more prevalent than formerly and of a severer type. The whole of the establishment in the Sholakurray and Chennat Nair forests have suffered severely, including myself.

Financial Results, vide pages 12 and 13, paragraph 88.

I beg to remain, &c.

(Signed) J. E. LLOYD,
Overseer in charge of Bolumputty, Paulghat.

APPENDIX O.

OOTACAMUND,
30th April 1868.

From

LIEUTENANT-COLONEL H. R. MORGAN,
Deputy Conservator of Forests.

To

MAJOR R. H. BEDDOME,
Officiating Conservator of Forests.

SIR,

I have the honor to forward the Annual Report of the forests under my charge for the official year 1867-68.

2. The total expenditure amounts to Rupees 85,658-4-4, and the returns to Rupees 1,33,586-4-3, shewing a profit of Rupees 47,927-15-10 for the year, with wood in store valued at Rupees 2,23,602-10-11.

3. MUDUMALLAI FOREST.—The operations in the forest for the past year have been conducted by Overseer Iyasawmy Naick, who, having recovered from the severe attack of fever under which he laboured last year, has exerted himself in a creditable manner.

Felling timber.

Teak.....6,470½
Vengay.....9,027½
15,498

4. The quantity of timber felled and stored in depôt this year is but small, namely, 15,498* cubic feet, at a cost of Rupees 1,452-15-5. It is not intended that the stock on hand should be increased, the present amount being deemed sufficient for the calls of the next three years.

Sawing timber.

5. The amount of timber sawn is 952½ square feet of teak, at a cost of Rupees 47-9-11.

Dragging timber.

6. Elephants, four in number, have dragged from the forest to the road, 17,796½ cubic feet of Teak and Vengay wood, which, at little over two annas per cubic foot, amounts to Rupees 2,373-14-11 against their feed and keep of a similar sum.

7. During the past year 30½ pairs of bullocks and 5 carts have been purchased. There are at work on an average 25 carts which have been employed in carting timber from the depôts in the forest to Tippecaudoo, &c., 24,748½* cubic feet of teak have been carted, which at contractors' rates amounts to Rupees 7,935-11-3 against their feed and keep, of Rupees 7,029-14-10, leaving a surplus of 300 Rupees for the repair of carts, and Rupees 600 for the purchase of bullocks.

Carting timber by Circar bullocks.

		Rs.		Rs.	A.	P.
* From	forest to Tippecaudoo.....	22,045½	=	6,889	4	9
,,	Mudumallai to Ooty...	295½	=	184	13	0
,,	Benni to Sultan's Battery.....	1,267½	=	475	3	6
,,	Mudumalli to Goodaloor.....	811	=	304	2	0
,,	Benie to Cooloor.....	329	=	82	4	0
Total..		24,748½	=	7,935	11	3

Road.

8. The main carting road has been kept in good repair, notwithstanding that one bridge in particular was twice destroyed by herds of wild elephants. Every exertion has been made to convey all wood from distant depôts out of the forest to avoid any loss by fire, and to have ready a supply of wood for carting in the wet season, the roads in the forest being then impassable.

Teak plantation.

Want of a Labour Law.

9. The trees planted in 1864-65, have made a fair growth, but the want of labor and the tremendous growth of grass has rendered planting a very difficult operation, in fact until we get a Labour Law in Wynaad, as they have in Ceylon, we shall not advance. In Ceylon they possess enormous advantages over us. We have no European Magistrates nearer

than 50 miles, and to travel 100 miles through jungle roads to settle disputes and obtain justice, is a labor added to our ordinary laborious duties, for which we have no time. It is my firm conviction, after a long service, that if all Forest Officers should be Magistrates, the work of Government would be much facilitated. The argument urged against Forest Officers having magisterial power is that they would adjudicate their own cases, not more so I think than any Assistant Collector who ejects and sets up the ryot of his taluq for non-payment of rent, or the Police Magistrate, say the Officer of the Lawrence Asylum Works, who orders a convict three dozen lashes for mutiny. The Forest Officer does not bring the charge against the man, this can be done through the Overseer, who made the advance.

Wood felled clandestinely.

10. There has been no seizure of wood clandestinely felled during the year.

Forest products.

11. Of forest products, there are several enumerated in former reports—there is nothing new.

Criminal prosecutions.

12. No criminal prosecutions.

New trees.

13. No new trees.

Demand for Vengay.

14 At the latter end of the year a demand arose for Vengay, too late for the official year's result, but this year there will be probably a sale of 5 to 6,000 cubic feet at 8 annas a cubic foot. This rate, if it does not yield a large profit, at all events affords work for our elephants and Coorumbers,

Sale of Timber.

15. Timber sold to merchants in the forest is 386 cubic feet, amounting to Rupees 655-4-6, and in Ootacamund 2,679 cubic feet amounting to Rupees 3,565-9-8. The total sum realized by sale of wood is Rupees 4,220-14-2, which, together with a sum of Rupees 237-6,* the amount of carriage of timber supplied to D. P. W. by Circar bullocks, and of seignorage on bamboos, has been carried to the forest revenue.

7	8	0	Seignorage.
225	12	0	Carriage.
4	2	0	Miscellaneous.
237	6	0	

Supply of timber to D. P. W.

16. The quantity of timber supplied from the Ootacamund Depôt to the Lawrence Asylum Works and other public works on the Neilgherries is 29,205½ cubic feet,* and that supplied from the Mudumalla Kurkana for the Goodalore bridge works is 1,413⅛ cubic feet, or making a total of 30,618⅝ cubic feet = 60,456-5-5, which has been adjusted on receipts from time to time.

*Lawrence Asylum Works	10,511¼	Cantonment Bridge	63⅝
Wellington Workshop	4,046⅜	Seegur Bridge	337⅜
Ootacamund New Church	6,116	Nadoovuttum works	687
Do. New Jail	3,798⅜	Chinchona Plantation	350½ = 29,205¼
Do. Police Line	136¼	Goodalore Bridge in Mudumallay	1,413⅛ = 1,413¼
Do. Cutcherry works	37½		30,618⅝
Goodalore Bridge in Ooty	365		
Coonoor Bridge	2,754⅜		

Stock of timber on hand.

17. The quantity of timber to be accounted for is given in Memo. No. II. furnished with the Annual Accounts for the past official year.

Unadjusted advances.

18. The outstanding advances remaining to be adjusted amount to Rupees 4,856-12-2. The introduction of increased ready money rates has had a good effect. There are no bad debts, and the timber is carried regularly, the advances may be said to be nil, as with the exception of Sawyers and Coorumbers, the rest is provisions, which of course is certain to be recovered.

Health of Establishment.

19. The health of the Forest Establishment has been rather better than usual, this is partly due to a large supply of Quinine received from the Medical Stores.

Financial result.

20. In summarizing the operations of the past year, I would observe that the financial result may be considered satisfactory, notwithstanding the rise that took place in wages and grain last year still continues.

21. The profits would have more nearly resembled those of last year, had we not been obliged to expend Rupees 4,000 in the purchase of bullocks, and increase our rates of carriage (as advances were no longer to be given) by 30 per cent. This alone made a difference of 5,000 Rupees in the year.

Financial Results, vide page 14, paragraph 98.

APPENDIX P.

SEEGUR AND SUTTIAMUNGALUM.

Forest worked by the Overseer.

22. These forests have been worked for the past year by Overseer Appavoo Moodelly, who has carefully performed his duties.

23. The quantity of Sandalwood felled and stored in depôts is 8,085 maunds, valued at Rupees 17,323-9-7.

Principal operations.

	Rs.	A.	P.
* 7,614 trees felled.. ..... cost	1,460	11	10
14,649 roots dug.....	1,944	5	6
10,517 trees sawn .. .. / 8,085 mds. prepared... . ..	1,205	6	10
8,109½ mds. of carriage	2,491	11	9

24. The principal operations* during the year have been preparing Sandalwood and forming experimental plantations of trees. The usual conservation of the forests has been carefully carried out.

Dragging timber.

25. But four pairs of buffaloes are employed in dragging timber, 1,378 maunds of Sandalwood have been brought to depôt, which at contract rate amounts to Rupees 516-12, against their feed and keep of Rupees 269-4-5.

Sandalwood Plantations.

26. The experiments in Sandalwood plantation are being carefully carried out, a large nursery at Tullamallai is kept up. Shade and water are essential to the growth of the young plant. 4,710 plants have been planted during the year at a cost of Rupees 908-9-9, including new nurseries, &c.

Forests products.

27. There are but a few forest products in this range, Acacia bark, gallnuts and a dye root. These might be placed under the Forest Officer.

Trespasses committed.

28. A few special trespasses have been committed, such as the Tahsildar, contrary to the remonstrances of the Overseer and my orders, making over valuable sandalwood land to ryots for cultivation. The Collector has been addressed on the subject.

Health of establishment

29. The fever this year has not been so severe as last, still the sandalwood forests at Hussanoor are very deadly.

Unadjusted advances.

30. The advances are very small, viz., Rs. 289-2-7.

Sale of timber.

31. A small amount of Vengay has been sold at Suttiamungalum. The total amount realized under this and license is Rs. 1,528-2-11, and in Seegur Rs. 314-10-0, which have been carried to the credit of forest revenue.

Sale of Sandalwood.

32. The value of Sandalwood sold to merchants is Rupees 27,309-2.

Supply of timber to D. P. W.

33. No demand has been made for timber from this range by the D. P. W.

Financial results.

34. The financial results may be considered satisfactory.

35. Financial Results, vide page 14, paragraph 104.

APPENDIX Q.

Bhowani Forest.

Forest worked by the Overseer.

34. The work during the past year has been carried on by Overseer Grant, who has been diligent in the performance of his duty.

Jungle conservation.

35. The usual conservation of the jungles has been carefully attended to.

Sandalwood felled.

36. The quantity of Sandalwood felled and stored in depôt is 3,529½ maunds, valued at Rs. 13,401-9-6.

Elephants or public cattle.

37. There are no elephants or public cattle in this range.

Firewood reserve.

38. No plantations have yet been made, but a firewood reserve on the banks of the river near Cauverypooram, the site of the ancient anicut has been selected, and arrangements are to be made for taking over the land and planting it, especially as it can be watered by a channel from the new anicut about to be built five miles above Cauverypooram. The wood can also be conveyed cheaply by boats to Erode, the Junction Station. At present the Erode and Trichinopoly lines are supplied with firewood from the Paulghat jungles, a distance of 70 miles, this at an anna a ton a mile, brings the cost of firewood for carriage alone to Rupees 4-6 per ton. The seignorage is Rs. 1-2, and the sum paid to firewood contractors cannot be less than four rupees a ton, this brings up the cost of the wood at Erode to Rs. 9-8 per ton. The question to be solved is, can we grow firewood on the banks of the Cauvery, and deliver it at the Railway Station at Erode for this sum? I am of opinion that it can be done, if we can obtain water from the new anicut.

Trespass.

39. One or two special cases of trespass were reported.

Limit of operations.

40. The operations has been confined to preparing Sandalwood, issuing licenses, and conserving the jungles.

Timber confiscated.

41. Some timber was confiscated.

Health of Establishment.

42. The Overseer and Goomastah have been laid up with fever frequently during the past year, the peons have also suffered.

Sale of wood.

43. The sales by license of Teak, Vengay, Acha, &c. have considerably increased this year, they amount to Rupees 2,395-6-6. The increase is solely due to the intelligence of the Overseer in preventing illicit felling.

Sale of Sandalwood.

44. A sum of Rupees 13,500 has been realized by the sale of Sandalwood.

Timber supplied to D. P. W.

45. None.

Financial results.

46. The financial results appear satisfactory.

Financial Results, vide page 15, paragraph 110.

APPENDIX R.

Collegal Forest.

Forest worked by Mr. Spring.

47. The operations for the year have been carried on by Mr. Overseer Spring, whose health quite unfits him to bear the exposure required in visiting unhealthy forests.

Jungle conservation.

48. The conservation of the jungles has not been attended to as strictly as I desired, owing to the abovementioned cause.

Sandalwood felled.

49. The amount of Sandalwood felled and stored in depôt is 4,392 maunds, valued at Rupees 16,392-13-0.

Carts and Bullocks.

50. The carts and bullocks have been useful in keeping down rates, which owing to a dearth of grain had a tendency to rise.

Operations limited.

51. The operations have been almost confined to Sandalwood felling, these works are now being carried on near the Madaiswerum Hill. A small amount of Vengay has been felled.

Sandalwood plantation.

52. A small experimental Sandalwood plantation has been commenced.

Forest produce.

53. With the exception of Valumbark for the Arrack contractor, no minor forest produce is under our control.

Criminal prosecution.

54. No return of criminal prosecutions, if any, has been sent by the Overseer, though twice demanded.

Health of Establishment.

55. There has been the usual amount of fever amongst the the establishment.

Wood sold on License.

56. A small amount of wood was sold on the License system amounting to Rupees 419-4-0, a very unsatisfactory sum.

Sale of Sandalwood.

57. Sandalwood to the value of Rupees 17,426-10-0 has been sold to the merchants.

Timber supplied to D. P. W.

58. None.

Revenue expected.

59. A large return by sale of Licenses and Vengay wood was expected, but has not been realized.

Financial results.

60. The financial results appear satisfactory as far as Sandalwood is concerned.

Financial Results, vide page 15, paragraph 116.

APPENDIX S.

Neilgherry Sholas.

Conservancy.

61. These sholas have been carefully conserved by Mr. Overseer Newman, at Coonoor and Mettoopolliem, and Mr. Taylor at Ootacamund.

Boundaries.

62. Boundaries of Government sholas and private estates are being laid down, but the work proceeds slowly. Mr. Money's estate at Devi Shola has not yet been demarcated.

Non-performance of Mr. Money's agreement.

63. The tenant of Devi Shola has not yet performed his contract of stacking 5,000 loads of wood in two years, he in 15 months having only succeeded in stacking 900 loads, the consequence of which was that we were obliged to fell more green wood in the northern horn of the shola than was anticipated, to the great damage of that portion of the shola.

Carts and Bullocks.

64. There are no carts or bullocks.

Confiscation of wood.

65. A good deal of wood has been confiscated, amounting to Rupees 75 ; in fact, when the Overseer goes north, the wood stealers go south, and as they number 200 to one, the wood stealers have the best of it, notwithstanding that the punishment inflicted by the Sub-Magistrate is more severe than formerly. Two Overseers for the Ooty portion of the hills are urgently required.

Plantation.

66. In the Eucalyptus timber plantation, 16,613 Eucalyptus Globulus have been planted, 5,305 mossed, 2,000 in beds, and 570 pits are ready for planting. In the Governor's shola 200 A. Molissima, 12,000 A. Melanoxylon,

12,000 E. Globulus have been planted. The nurseries contain Australian Acacia 5,000 and E. Globulus.

New trees. 67. No new trees.

Shola operations. 68. The operations have consisted in conserving Government sholas, forming nurseries, extending plantations of timber trees and firewood, and supplying the D. P. W. with fuel.

Health of the Establishment. 69. The health of the forest people has been good.

Sale of wood. 70. The amount of wood realized from Licenses, and from Firewood, Bamboos, and Valumbark contract is Rupees 2,551-5-3.

Supply of wood to D. P. W. 71. 3,529 cart loads of wood were supplied to the Lawrence Asylum works and Wellington Work-Shop, the value of which amounts to Rs. 2,193-4, which has been adjusted on receipts furnished.

Financial results. 72. The financial results are as usual not very satisfactory, due partly to the fact of the Devi Shola owner not having performed his contract, and partly to the large number of private sholas open for the sale of firewood.

Financial Results, vide page 16, paragraph 124.

APPENDIX T.

Australian Plantations.

Increase of revenue of Tramway commenced. 73. If a Tramway from Mettoopolliem to Coonoor is commenced, the returns from the sholas will be largely increased.

Worked by Mr. Newman. 74. The works here have been carefully carried on by Mr. Overseer Newman.

Conservancy unnecessary. 75. No measures of conservancy necessary.

Timber felled. 76. No timber felled or stacked in depôts.

Carts. 77. There is only one cart for carrying plants from the nursery to the plantation.

Confiscation of woods. 71. No timber confiscated on account of clandestine felling.

Operation. 79. The number of trees planted out is as follows :—

Eucalyptus Globulus.

A. Melanoxylon	10,000
A. Molissima	8,500

In pots.

E. Globulus	8,500
A. Melanoxylon	12,000
A. Molissima	„
In beds	20,000

Limit of operations and wood sold. 80. The operations have been confined to planting out, increasing the nursery, and supplying firewood to the public from the old plantation. The receipts on this head have been Rupees 916-14-0.

Health of Establishment. 81. The health of the people in the plantation has been good.

82. The trees are improving and the plantation will in a few years more than pay

Plantations improved.

its expenses. The Conservator and myself calculated an acre of the first planting to contain 300 loads of firewood, valued at one Rupee or 300 Rupees per acre.

Pay debited to Neilgherry Sholas.

83. The pay of Mr. Newman for supervising the plantation has, since the date of his promotion to the 1st Class Overseership, been debited to the Neilgherry sholas.

Financial Results, vide page 17, paragraph 130.

I have the honor to be, &c.

(Signed) H. R. MORGAN, Colonel,
Deputy Conservator of Forests.

APPENDIX U.

SALEM FORESTS, 29*th April* 1868

From

LIEUTENANT C. J. WALKER,
Deputy Conservator of Forests, Salem and South Arcot.

T

MAJOR R. H. BEDDOME,
Officiating Conservator of Forests.

SIR,

I have the honor to submit the Annual Administration Report of the forests under my charge for the past official year. Each range is shewn separately as in the monthly progress reports, by which plan the relative yield and value of the various tracts, which form indeed separate forests, is more clearly shown. The receipts for the whole of the forests (Salem District) amount to Rs. 53,566-11-0 and the expenditure to Rs. 36,678-15-4. Timber in store is valued at Rs. 9,241-12-5, shewing a surplus of Rs. 485-6-11, as compared with the stock at the close of 1866-67. The balance in favor of Government is thus Rs. 18,873-2-7, which is favorable, considering that we have expended large sums on forest roads (Rs. 11,438-5-8), formation of timber yards (Rs. 1,656-4-7), purchase of tools and plant (Rs. 230-12-0), and in enclosing tracts for the supply of Railway fuel, (Rs. 847-3-6), making a total Rs. 14,172-9-9, all of which may be considered as extraordinary expenditure, which it would be more correct to shew against capital than income.

Rupees 1,783-4-4 have also been expended on plantations, from which of course no revenue can be derived for many years.

Introductory remarks, mentioning the name of the Officers, &c.

1. SALEM FORESTS.—During the introduction of the close system, the services of an Overseer were more than ever required to conduct the operations in this, range (comprising four taluqs) and I therefore, with the sanction of the Conservator, appointed C. Ramier as a temporary Overseer, 4th Class, his salary being paid from Working Charges money. He has done exceedingly well, and the large increase in the revenue of the range is mainly attributable to the zealous manner in which he has performed his duties. He assists also in the preparation of the Monthly Accounts, &c., which are of course more complicated since the introduction of departmental working.

Measures taken, for extending, improving, or protecting the forests.

2. The Sandalwood in the Kolla Mullays has received much attention. 175 trees have been cleared of creepers by the forest peons as exhibited in Statement A. The wood is of an inferior description to that found on the Jevades and in Denkencottah. I submitted a full report of

my visit to these hills and the Colroyen Mullai, also in this range, which is recorded with Government Order No. 2977, dated 16th December 1867. The boundaries between the Government and Jagheer forests on the latter hills were settled by the Collector and myself. It is reported that Sandalwood is to be met with on the northern end of the Pucha Mullays in this range, and I intend visiting that tract during the current year.

Quantity of timber, of all descriptions felled and stored in depôts.

3. 110 maunds and 19 lbs. of Sandalwood billets were felled, prepared and stored in Salem Depôt. 523 cubic feet of timber have been felled and brought into Salem as an experimental measure.

Description of work.

4. All the work in the range is performed by contract.

Timber, &c. removed from the forests under licenses.

5. Statement B. exhibits the quantity of timber, &c. removed from the forests on License. It is difficult to ascertain the exact quantities under the present experimental system of contracts, but eventually every bandy and head load will be checked and entered in our books.

Number and amount of confiscated timber.

6. Quantity of timber, &c. confiscated and amount realized are shewn in Statement C. Clandestine felling is very common in this range, although I think it has decreased since the present Collector and Magistrate assumed charge, as convictions and punishments are now obtained under the Indian Penal Code for forest theft and mischief. It is of course always a difficult matter to obtain sufficient evidence to secure conviction, even when there is no moral doubt in the matter.

Timbers, &c. sold from Government depôt, &c.

7. 133½ maunds of Sandalwood billets, roots, &c. and 19 lbs. of saw dust sold from Salem Depôt realized Rs. 382-8-0, and 298 cubic feet of timber, principally Dinduga Conocarpus latifolia), sold in public auction at an average rate of Annas 13 per cubic foot or Rs. 250, in all 225 cubic feet, of an estimated value of Rs. 160 remain in the Salem timber yard.

Timber supplied to Public Departments

8. No timber has been supplied to the Public Departments during the year.

Outstanding advances.

9. Outstanding advances amount only to Rupees 16-4-6, of which most part is permanent advance in the hands of the Taluq Pygusts for the removal of confiscated timber from the forests to Salem or other large towns.

Plantation.

10. 100 acres of ground were ploughed up in June at Mullapuram and 1,533 measures of Babool seed sown broadcast in the manner laid down by Dr. Henderson (Departmental Circular No. 9 of 1866). At first they promised to do well, and a large proportion germinated, but the failure of our monsoon in October, and constant drought since has been very trying, and many of the young shoots look very sickly. I trust however, if showers fall this month, as we expect, that many will revive. I shall try a little this year, sowing at the same time some seed of the "Muttu Cottae" Castor Oil plant (Ricinus Communis,) which will give shade. In the reserved tracts for fuel, quantities of the Babool and other seeds according to the soil will be dibbled in during the rainy season. I have also put down a few seeds of the Red Saunders (Pterocarpus Santalinus) and Red wood (Adenanthera Pavonina), which promise to do very well.

On the Shevaroy Hills (Plantation No. II.), 200 Teak, 3,650 Toon (Cedrela Toona), and 40 Pine (Pinus Pinastea) have been planted out from the Nursery. The season has been very adverse, and expense has consequently been much increased by the cost of watering. The Teak will, I fear, not pay on these hills, as there is too little moisture. The Pine again prefers, I think, a more sandy soil, but the Toon trees are doing very well indeed. I propose putting out more this year along with Eucalypti, and if I can procure some seed, a few of the Norfolk pines, which do well here. Seed of the Chinchonas (Succirubra and Micrantha) has been supplied to a Coffee Planter on these hills, who volunteered to experiment carefully and ascertain if the plant can be reared to advantage. Mr. McIvor has

also kindly promised to supply a few young plants of the Jalup (Exogonium Purza) lately reported on by the Government Quinologist, and I have little doubt of its succeeding well on the non-elevated slopes.

Forest products.

11. Large quantities of the Kupli Poddi (Rottlera Tinctoria) are obtainable on the Colroy Hills (vide report alluded to in para. 2), but the trees are generally situated on the upper plateau of the hills, and are therefore the property of the Poligars. A careful estimate of the quantity procurable from Government forests is being prepared. Attention will also be given to the gum Kino to be derived from the Vengay tree (Pterocarpus Marsupium), which occurs frequently in these forests.

Trespasses or damages committed in the nurseries.

12. Much damage has been done by trespasses in our plantations and reserved tracts. The question as to whether such trespasses, when committed in enclosed tracts and in defiance of repeated intimations, may be brought within the scope of Section 447, Indian Penal Code, has been referred for decision. The Collector and Magistrate is strongly of opinion that they can, but there appears to be a diversity of opinion on the subject. There is no doubt *practically* that if the only resources for punishing such offenders is by civil action, necessitating a long and intricate trial against parties who are as a rule possessed of little or no effects to pay any damages which may eventually be adjudged, the difficulty of forming and protecting such plantations and reserves will be greatly increased, if indeed it does not become insurmountable.

The result of criminal prosecutions is shewn in the quarterly statements submitted in accordance with Circular No. 16 of the Conservator. Convictions have been numerous, although in many cases there seems still to be a disinclination to treat such breaches of law as ordinary cases of theft or mischief.

Health of the Establishment

13. The health of the establishment has been all that could be wished.

New or rare plants.

14. No valuable or rare plants have been discovered during the year.

Summary of operations.

15. The License and Voucher system is still retained in the range. A timber depôt is however being formed at Salem, and I propose gradually to supply all trade requirements by departmental agency, retaining the License system for local requirements in those parts which are adjacent to the forests and for the felling of the unreserved or jungle woods generally.

Three firewood reserves have been formed for Railway requirements in accordance with Government Order No. 159, dated 15th January 1867.

The extension of these reserves, the partial introduction of departmental working and allotment of small tracts adjacent to each village for the use of the ryots will be the principal object to which we shall direct our attention during the present year.

16. Pay of the Deputy Conservator, Head Quarter Office Establishment and Contingencies, is divided amongst the three ranges.

Tripatur Forests.

Introductory remarks.

Overseer Hodgson has been in charge throughout the year. Owing to this Overseer's ignorance of the language and of the system of accounts in the simplest form, the working of this range has not been satisfactory. In the important duty of travelling over his range and actual forest duties, Mr. Hodgson has given no cause of complaint, but his office and account work has been carelessly performed, and he is wanting in method, and has no idea of organizing or superintending the duties of so important a charge. He has now been transferred to the Nellumbur teak plantations, where I think he will suit better. I have appointed a Mr. Franklin on probation. He has high testimonials, and will I trust turn out well.

BENGAL SECRETARIAT

2. The Jevadi and Yellagiri Hills have been visited and carefully explored, and the boundaries for reserves definitely described. It only remains now for the land revenue authorities to ascertain if any private rights would be interfered with, &c., and allot tracts for village supply in communication with Forest Officer.

Measures taken for improving, &c. the forests.

3. One reserve on Yellagiri has been finally demarcated, boundary stones erected and notification made in District Gazette. I fear that some examples will have to be made before we can convince the villagers that Government really intend to prevent all persons and cattle entering these reserves, and are fully determined to punish those who do.

4. Statement A. exhibits number of Sandalwood trees cleared of creepers during the year.

5. 551—26 maunds of Sandalwood billets; 106—14 maunds of roots and 32 of Chilkah were prepared and stored in market depôt at Tripatoor; 159—27 maunds of billets remain in forest depôts.

Quantity of timber felled and stored in depots.

6. 1,319 cubic feet of timber have been stored in the timber yard at Tripatur. A large quantity remains in the forest, which it is proposed to store in Hurur, but the rates demanded for carriage are prohibitive.

Description of work.

7. All carriage, &c., is executed on contract.

Timber, &c. removed from the forest under Licenses, &c.

8. The quantity of timber, &c. removed from the forests on licenses and tickets is shewn in Statement B. The firewood and charcoal is supplied on contract as in Salem and Denkencotta.

Number and amount of confiscated timber.

9. The number and amount of confiscated logs, &c. is exhibited in Statement C. There is a great deal of clandestine felling throughout this range, attributable mainly to the facilities for removal afforded by the proximity of the Railway, the great demand from Bangalore and Madras which is largely supplied by Lubbay merchants of Vaniembady and Tripatore, the ill-defined boundary between Salem and North Arcot Districts, and the issuing of permits by Monegars and petty village Officers in the latter district, which does great damage. The presence of a large Jagheer near Cotaputty worked by a contractor, and the want of careful supervision on the part of the Overseer. Mr. Hodgson, it is true, has confiscated a very large amount of timber himself, but the continual repetition of clandestine felling shows that his establishment is not in good working order, and that our rules are often evaded with impunity. The Overseer complains of great delay in magisterial enquiries (by the Sub-Magistrates) and inadequate punishment of offenders. The clandestine felling on the Javadies slopes carried on by persons from North Arcot, is most difficult to bring home, as the Village Officers in that district do all their power to shield the offenders. I have again addressed the Sub-Collector of North Arcot on the subject, and trust to be able to put a stop to it during the year.

Timber, &c. sold from Government depôt.

10. 1286-20 maunds of sandalwood billets, roots, &c. were sold, realizing Rs. 4,950-7-5, which is favourable. The quality of the Javadi hill sandalwood this year was excellent, being much superior to that of Denkencottah range. 389⅔ cubic feet of timber were sold to merchants and others —1,539⅔ cubic feet, valued at Rupees 1,154-13-0, remain in the timber yard.

Timber supplied to Public Departments.

11. No timber has been supplied to Public Departments from this range.

Outstanding advances.

12. Outstanding advances amount to Rupees 772-4-9, which includes however Rs. 318 still to be recovered from Mr. Hodgson on account of his cash chest robbery, and which will be liquidated by instalments of Rupees 30

from his monthly pay. Of the balance a large portion is on account of advances made to sawyers and others preparing and removing confiscated Vengay from the Yellagiri Hill, and will be recovered in cash as the timber is disposed of, and the remainder consists of sums paid to timber conrtactors, &c., against which we have timber and sandalwood in the forests, but the amount remains unadjusted till it is lodged in the yard or depôt.

Plantations.

13. No plantations have been formed in this range; a little sandalwood seed have been put down on Yellagiri as an experiment.

Forest products.

14. Kupli Podi (Rottlera Tinctoria) is found in some quantity on the Javadies and Yellageri. It is now being collected, the season being later in Denkencottah.

Trespasses or damages committed in the reserves, &c.

15. Convictions not so frequent as could be wished. This must, I think, be attributed to the causes mentioned in para. 6 and the difficulty in such an extended range (four taluqs) of effectual watching by our comparatively small establishment and still more of actual detection of the parties concerned. The greater number of cases have therefore been settled departmentally (*i. e.* the timber has simply been confiscated and sold)

Health of the establishment.

16. Establishments have enjoyed good health with the exception of a little fever on the Javadies.

New or rare plants

17. No new plants have been discovered.

Summary of operations.

18. The Voucher and License system has been almost entirely abolished, but the rates realized do not encourage us in forming large depôts for general supply This is I think caused by the large quantities of timber thrown on the market by the Jagheer contractor near Cotaputty, and to the defective arrangements for the prevention of clandestine fellings in the North Arcot frontier. The contract for the Jagheer expires at the end of this year, and will not I think be renewed. I shall therefore refrain from felling and allow the contractor to supply the market, as he is of course anxious to get as much out of the Jagheer forest as he can, merely keeping a small supply in our depôts to supply local demands. Two reserved tracts for railway firewood are in course of formation, and this subject will receive increased attention during the year just commenced. The reproduction in the tracts already enclosed is favorable. The total revenue derived from seignorage on firewood supplied to railway contractors in the Salem and Tripatoor ranges for the ten months is Rupees 7,679-12-3, the quantity supplied being 9,023 tons.

Introductory remarks

DENKENCOTTA FORESTS.—These forests have been under the charge of 1st Class Overseer Mahomed Ally Sahib, who has given every satisfaction and shown much zeal and ability in introducting departmental working throughout this range.

Measures taken for improving, &c., the forests.

2. The forest road from Denkencotta has been put in thorough repair as far as Conducotta (8 miles), but as this village is above the ghaut, we can make no use of the road until it is carried on further. Operations have lately been suspended for want of funds, but a trace has been made and the work will at once be re-commenced. Operations on the forest roads from Penagara to the Acha forests have been vigorously carried on and both are approaching completion. The gradients in some parts are found to be too steep for timber carts drawn by bullocks and will have to be reduced at considerable expense. Rupees 100 have been judiciously expended by the Overseer in the repair and improvement of a dragging path from Codagherry Hill, the number of sandal

and other trees cleared of creepers is shewn in Statement A. Much attention has been paid to this important work.

Quantity of timber felled and stored in depôts.

3. 681½ maunds of Sandalwood, 683-7 maunds of Sandalwood roots and 71-18 maunds of chips and chilkah were felled and stored in depôt during the year.

7,367 cubic feet of timber, principally Acha (Hardwickia Binata) were felled, squared and carted to the timber yard at Denkencotta. 1,340 cubic feet have been stacked on the banks of the Chenar river, ready to be conveyed to Penagra immediately the road is open for traffic. Twenty-seven cubic feet have been removed to Penagara.

Description of work.

4. As reported last year, carriage in this range is difficult to obtain and rates are often high. The Overseer is very properly averse to the department having cattle, &c., if we can avoid it, but I fear we shall be obliged partly at least to become our own carriers and to be independent of contractors. The employment of one or two elephants in the Acha wood forests seems imperative.

No Government elephants, cattle or carts are now employed in the forests.

Timber removed from Forest under license.

5. The quantity of timber, &c., removed on license is shewn in Statement B. The receipts from this source amount to Rupees 3,254-4-9, derived principally from contractors for the supply of firewood from forests marked off by the department, who pay a lump sum and collect the seignorage at the former Government rates.

Number and amount of confiscated timber.

6. A small quantity of timber, &c., was confiscated and sold this year. There is little clandestine felling in this range.

Timber sold from Government depôts.

7. 1,837 maunds of Sandalwood billets, roots and chilkah realized Rupees 6,737-7-9 and 4872½ cubic feet of timber Rupees 4,150-12-11. The rates realized both for Sandalwood and timber in this range were high, that for Sandalwood billets averaging Rupees 4 per maund of 28 lbs., roots, &c., Rupees 3, and that for timber, ranging from Rupees 1-4 per cubic foot for Achawood, to Annas 12 for jungle wood.

1,180½ maunds of Sandalwood and 4,372 cubic feet of timber remain in stock, the market value of which is Rupees 7,400, more or less.

Timber supplied to Public Departments, &c.

8. 283½ cubic feet of timber were supplied to the Remount Depôt, 6¼ cubic feet to the Department of Public Works, and ·30 bamboos as a sample to the Ordnance Department. The amounts due on account of the above have been adjusted in the monthly accounts and vouchers submitted.

Outstanding advances.

9. Outstandings amount only to Rupees 251-11-0, made up principally of a number of petty advances to Poojaries for the preparation of Sandalwood, &c.

Plantation.

10. No plantation has been formed in this range. It is proposed to form one for Sandalwood, but we await the result of the experiments being carried on in other districts.

11. This range is rich in forest products, which have been repeatedly described. 42 lbs.

Forest products.

Kupili Paddy (Rottlera Tinctaria) were supplied to Mr. Hanbury through Dr Cleghorn, and it is this quantity of which he speaks so highly in his letter recorded in Government Order No. 487, dated 21st February 1868. Careful enquiry is being made as to the quantity of this powder procurable throughout the district.

Trespass or damages committed in the Reserves, &c

12 Quarterly statement showing the number of prosecutions under the Indian Penal Code have been submitted.

Health of Establishment

13. Fever of a virulent type was very prevalent in the months of October, November and December, and almost all th Establishment, both conservancy and working, suffered more or less.

New or rare plants

14. No new species have been discovered during the year In accordance with my orders the Overseer is making a collection of specimens of the different timbers, forest products, &c. of the range, which will be useful and instructive.

Summary of operations

15. Operations generally call for little further remark. Departmental working has been successfully substituted for the voucher and license system, which is now only retained in remote parts of the range, where we have no depôts, and where licenses are therefore issued to parties requiring timber of the reserved classes.

A temporary establishment to be employed in demarcating the reserved forests has been sanctioned (Government Order No. 414, dated 13th September 1868.) Owing to want of water, operations will not be commenced till 1st June, when this important work will be carefully proceeded with in communication with Land Revenue Authorities.

A.

Statement of Sandal and other Trees cleared of Creepers in the Salem Forests for the official year 1867-68.

Range	By Peons.		By Coolies.					Remarks.
	Number of Sandal trees	No of trees of other descriptions	Number of Sandalwood trees	Number of trees of other descriptions	Cost			
Salem.....	175	...	...	...	...	..	...	
Tripatur.....	33	...	2565	...	48	15	6*	*Cost of felling 184 Sandalwood trees is included in this amount as the same coolies felled trees and cut creepers.
Denkencottah.....	165	58	612	2877	11	8	6	
Total...	373	58	3,177	2,877	60	8	0	

B.

Statement shewing quantity and description of Timber, &c. removed from the Salem Forests on License and Tickets during the official year 1867-68.

	Bandy Loads.										Head Loads.							
	Bamboos.			Total of bandy loads of Timber.	Firewood.				Total of bandy loads of Firewood, &c.	Grand total of Bandy loads.	Timber.		Total of head loads of Timber.	Bamboos.			Total of head loads of Timber.	Grand total of Head loads.
	1st Class.	2nd Class.	3rd Class.		Firewood.	Bamboos.	Bark.	Charcoal.			Jungle wood.	Karungal and Satinwood.		Bamboos.	Bark.	Charcoal.		
Salem Range	368	179	289	836	6,217½	3,093	455	2,342	12,107½	12,943½	754	...	754	18,398	18	6,281	24,697	25,451
Triputur Range	...	2	47	49	2,404	1,209	1,339	430	5,382	5,431	1,486	80	1,566	23,791	31	3,482½	27,304½	28,870½
Denkencotta Range ...	6	26	24	56	536	1,053	558	445	2,592	2,648	390	284	674	12,857	177	712	13,746	14,420
	374	207	360	941	9,157½	5,355	2,352	3,217	20,081½	21,022½	2,630	364	2,994	55,046	226	10,475½	65,747½	68,741½

D.

SALEM FORESTS.

Approximate statement of articles granted on Free Pass to Ryots for agricultural purposes, and erection of villages or houses destroyed by fire, &c. during the year 1867-68.

Forest Range.	Bandy loads of small bamboos.	Bandy loads of large bamboos or Vulai.	Bandy loads of split Moongil.	Bandy loads of plough-shares.	Bandy loads of yokes.	Bandy loads of props and rafters.	Remarks.
Salem.....	110¼	1½	3 1/24	.....	1¼	164¼	
Tripatore.....	355¼	89½	632½	7¼	40 1/10	51¾	
Donkencotta.....	402¼	556 7/20	.....	84 8/10	97	46	
Total...	868¼	647 7/20	635 13/24	91 13/20	137 7/20	262	

DEPUTY CONSERVATOR'S OFFICE,
CAMP SALEM, 29*th April* 1868.

(Signed) C. J. WALKER, LT.,
Deputy Conservator of Forests.

Financial Results, vide page 20, paragraph 165.

APPENDIX V.

SOUTH CANARA, 1867-68.

From

GEORGE CADELL, ESQ.,
Assistant Conservator of Forests, South Canara.

To

MAJOR R. H. BEDDOME,
Officiating Conservator of Forests, Ootacamund

SIR,

I have the honor to forward the Annual Report on the forests of South Canara which have been under my charge throughout the year.

General work

2.- The large stock of timber in store at the close of last year rendered it unadvisable to fell at all, except for the requirements of the Revenue and P. W. Departments, and the private use of ryots. My attention therefore was directed to the floating of the timber already felled to the coast. The arrangements made were carried out satisfactorily in two ranges, viz., Oopinangady and Cassergode, but in consequence of operations having been commenced on too large a scale in the third range, and the funds at my disposal being insufficient to supplement the sum originally allotted for the range, the timber has not yet arrived at the coast.

3. The operations are detailed below :—

Timber felled, 611 logs and 19 boats.
„ floated or carted to depôts, 297 logs and 30 boats.

Elephants and other cattle.

4. There are no elephants belonging to Government in this district.

5. Twelve buffaloes were procured from North Canara at the close of last year, but the experiment has not been a successful one, as far as the dragging of timber is concerned, and for

carting, bullocks are infinitely preferable. I may here mention that these animals were formerly employed by the Forest Department in North Canara, but the nature of the ground, which I imagine, much resembles that in our forests being found unsuited for their use, they were disposed of. I have already brought this to the notice of the Conservator, and have recommended that they should be sold, and their places supplied by bullocks for the cartage of light timber on good roads. Elephants only are of any use in the jungle.

Vide letter No. 366 of 17th October 1867, and Progress Report for January 1868.

6. The License System, as is apparent by the results, works very well in this district, and no tax is more readily paid than the small seignorage* imposed on bamboos.

License System.

* 12 Annas per 100.

This is the only seignorage levied in the district. Firewood is under the charge of the Collector.

7. Fourteen logs of Wild Jack were confiscated at Oopinangady, in consequence of the purchaser failing to act according to the conditions of sale.

Confiscated timber.

8. The matter has been brought before the Board of Revenue, and will, if possible, be compromised, failing this an action brought by the purchaser against the forest department, will be heard after the adjournment of the court.

Proceedings of Board of Revenue, dated 3rd March 1868.

9. The sale of timber by tender and public auction was not large this year, but several outstanding debts having been collected, the receipts are very fair.

Timber sold by public auction.

41 logs of Wild Jack and Jack = 71 candies at 6 Rupees per candy.....Rupees 426
2 boats at Rupees 50 and 24..... „ 74

Total Rupees...500

10. There was a great demand for timber for the Department Public Works this year for the construction of wooden platform bridges, &c. These demands I had neither establishment nor funds available to supply, and the Department Public Works will in future cut their own timber, subject to the supervision of the Forest Department. The quantity of timber supplied is as under :—

Timber, &c. sold to Revenue and Public Works Departments.

Vide Proceedings of Government, No. 75 of 9th January 1868.

Kiral Bogi, 122¾	candies at rates averaging	from	Rupees	6-8-0	=	Rupees	858	8 0
Teakwood, 31	do.	do.	from	„	6-8-0	=	„	227	8 0
Wild Jack, 54¼	do.	do.	from	„	8-10-0	=	„	511	0 0
Reserved timber, 546 candies		do.	from	„	6-8-10	=	„	4,360	0 6
Junglewood, 417 candies		do.	from	„	4-6-8	=	„	4,236	8 0
							Total Rupees...	10,193	8 6

Length.....30 feet.
Breadth... .. 2½ do.
Depth..... 2¼ do.

11. Twenty-two boats were supplied to the Revenue Department for the use of the ferries of the district. These boats being of an unusually large size, were difficult to get.

12. No new planting has been undertaken at Parapa this year. Vacancies have been filled up, and the old plants, which have made great progress during the past year, have been pruned.

Plantation.

13. This tree has been planted in small quantities in various parts of the district. It does not succeed on the sea-shore, where alone it would appear to be valuable ; there are many trees in the interior of quicker growth and better suited for firewood.

Pinus Maritima.

14. According to G. O. dated 13th May 1867, No. 1069, specimens of the eight following gums have been forwarded to the Central Office for transmission to the Home Government.

Forest products.

No.	Names of Gums.	Botanical Names.	English Names.
1	Manda Dhoop.....	Canarium Strictum	Black Damer.
2	Googul Dhoop.....	Ailanthus Malabaricus	White Damer.
3	Aradal or Gamboge.....	Garcinia Cambogia	
4	Oopal Kai.....	Macaranga Tomentosa	
5	Bengha.....	PterocarpusMarsupium orKino	,,
6	Banapu or Mutty...	Terminalia Tomentosa..... ..	,,
7	Dhoop.....	Vateria Indica.....	
8	Kiral Boghi.....	Hopea.....	

The importance of these gums, probably from their uses being inadequately understood, does not appear to be recognized by the Natives of this district.

Health.

15. This year has been more healthy than the preceding one in the jungles, and the establishment has been tolerably free from fever and other sickness.

16. *Summary of Operations.*

Timber felled, 611 logs and 19 boats
,, floated or carted to depôt, 297 logs and 30 boats.
,, supplied to D. P. W., 1171 candies.

17. *Financial Results.*—The revenue, notwithstanding the transfer of the firewood to the Collector, has largely increased this year, nor is this due to any sudden demand. The district has every natural advantage, and as the knowledge of its resources becomes known, will be able to maintain a larger establishment and take a higher place amongst the other districts in the Presidency, while a large revenue is obtainable by judiciously following out the laws of conservancy proper.

Financial Results, vide page 21, paragraph 170.

I have, &c.,

(Signed) G. CADELL,
Deputy Conservator of Forests, South Canara.

APPENDIX W.

MANANTODDY, *25th April* 1868.

From

LIEUTENANT W. FULLERTON,
Deputy Conservator of Forests.

To

MAJOR R. H. BEDDOME,
Officiating Conservator of Forests.

SIR,

I have the honor to submit the annual Administration Report of Wynaad forests for the official year 1867-68.

2. Memorandum No. II. has been altered, so as to show the exact quantity of timber now on hand. It will be seen that Rupees 1,586-14-6 has been deducted from the value of Wynaad timber, and Rupees 1,970-11 from that of the Hoonsoor timber still remaining. In explanation of these deductions in value, I have to draw attention to my report of last year with regard

to allowances made to merchants at time of sale. These allowances have hitherto been disregarded when making up the stock of timber on hand at the close of each year, and the deductions thus made therefore show the total allowances in this way since the establishment of the Forest Department here. Of the sum of Rupees 1,586-14-6, deducted from the value of Wynaad timber on hand, Rupees 971-13-8 represent the difference between the estimated value of the timber at Hirnandy and Autersnutch, and the actual price received. The timber at Hirnandy was estimated at 1 Rupee per cubic foot, and that at Autersnutch at Annas 14. I was authorized by the Conservator of Forests if I could not get more than 14 Annas at Hirnandy to sell for that price (vide his letter No. 82 of the 27th June 1867), and he also told me not to sell for Annas 10 at Autersnutch. I therefore considered it advisable to sell for Annas 15 at the former and Annas 13¼ at the latter place, as there was no hope of getting any higher prices.

3. The charges for establishment and contingencies come to Rupees 492-5-9 more than the amount estimated, in consequence of the Deputy Conservator having been promoted to 2nd class from the 15th October 1867, and of his having drawn Rupees 150 travelling allowance for proceeding to and from Bangalore for examination in the vernacular in September 1867. But at the same time the amount of the working charges is Rupees 2,906-6-11 less than the estimate.

4. The receipts for the year under review were estimated at Rupees 15,000 against Rupees 15,518-7-8 actually realized.

5. The amount of timber felled was 17,560 cubic feet, being 13,193½ cubic feet of Teak and 4,366½ cubic feet of Vengay and Mutty. The quantity of timber carted to depôts was 13,666 cubic feet. This small amount is owing to the death of one of the contractors in December (he was also contractor for floating), when his successor found some difficulty in going on with the work at first. The carting was not commenced also till late, as though the contractors began first in September, they were compelled by heavy rain to leave off; and did not regularly begin again till the middle or end of December. They have moreover been unfortunate in loosing some of their bullocks.

6. 22,948 cubic feet of timber were delivered to contractors for floating to Hirnandy, of which 15,383½ cubic feet have been paid for. Nearly the whole of the remainder has now arrived at Hirnandy, and the second contractor will be paid up next month, the agreement being that the contractors are not to receive payment till delivery of the whole quantity delivered them. For convenience, the whole of this timber is shewn as in hand at Hirnandy. Here too the death both of one of the first contractors and his successor has caused delay. They both caught fever at Gundry, and the one as mentioned above died in December, the other at the end of February or beginning of March.

7. The demarcation of the forests has been completed, with the exception of two small portions where the boundary is not known. I have sent in a separate report on the demarcation, together with a chart of the forests, so that it will be unnecessary to do more than allude to it here.

8. The rates for floating from Gundry depôt to Hirnandy, had to be raised from Annas 2 to Annas 2¾, as the contractors said they could not possibly carry on the work at these rates unless they received advances. They have usually to go some distance to collect the floaters and have, of course, to make small advances themselves to induce them to come.

9. Since the closing of the accounts, Rupees 345-4-1 of the advances outstanding have been recovered, Rupees 150 in cash and Rupees 195-4-1 by the Deputy Collector, which has not yet been paid over to me.

* * * *

10. The disputed boundary between Mysore and Wynaad, near Gundry, has been settled, the Assistant Conservator, Astagram Division, has, I am told, been instructed to place boundary stones along it.

11. The health of the establishment has been rather better than usual throughout the year The Sub Overseer at Chedleth was away, however, for six months on sick leave, leaving a substitute to do his work. No changes have been made in the establishment.

Financial Results, vide page 22, paragraph 176.

I have, &c.,

(Signed) W. FULLERTON, LIEUT.,

Deputy Conservator of Forests.

REPORT ON THE GOVERNMENT FOREST IN WYNAAD.

1. *Timber trees.*—The following are the chief timber of value to be found in the Wynaad forests:—

	NATIVE NAME.	BOTANICAL NAME.
1.	Thaigina mara	*Tectona grandis.*
2.	Honeh mara	*Pterocarpus marsupium.*
3.	Beety mara	*Dalbergia latifolia.*
4.	Mutty mara	*Terminalia coriacea.*
5.	Bellay mutty mara	*Lagerstræmia micro carpa.*
6.	Dindalloo mara	*Conocarpus latifolia.*
7.	Kadhalsama mara	*Artocarpus hirsuta.*
8.	Hettaga and Arasantaigah mara	*Nandea cordifolia.*

2. *Teak.*—The teakwood through out the forests is seldom met with at a greater distance than from 6 to 7 miles from the Mysore frontier, and it extends to about the same distance on the other side of it as well. This belt is, on the Wynaad side, about 50 miles in length, with an average breadth of 6 miles, though in some places the breadth may be as much as 8 or 9 miles. The most easterly portion of the teak forest belongs to the Tirumalpad of Nellembar and is leased to Government as the Moodoomully forest. The teak is met with growing in patches, with here and there an intervening portion of forest which contains none. Before the forests were regularly conserved by Government, a very large quantity of teak was felled by traders from the Mysore country in the most accessible spots, while that in remote and inaccessible places was left untouched. Many trees also were girdled, for what reason does not appear very clear, as natives do not usually girdle trees which they intend to fell for timber, and most of the trees so girdled were not situated in places cleared for temporary cultivation. Nearly all the girdle teak, however, has now been felled by the Forest Department, and sold. There is still a very large quantity of first class teak remaining in the forests: some of the trees, more especially in the tract known as the Coodracote forest, are of enormous bulk; so much so, that it would be impossible to remove them, if felled, unless previously sawn up. The forests will bear the removal of at least 1,000 first class logs per annum, for many years to come. The teak in the Mysore forests which adjoin those of Wynaad, cannot, I think, be expected to yield a large supply in future, as from there being nearer at hand to Mysore traders, much more teak was felled in them previous to their being given over to the Forest Department than ever was in Wynaad. In about two years, too, the supply of teak from the forests of the Poolpully temple may be expected to come to an end, if the lessee continues his felling at the rate that he is at present doing, so that with careful conservancy and waiting for opportunities, the Wynaad forests may still be expected to re-pay Government well.

3. *Karinthagara* (*Vengay in Tamil.*)—This is a very good timber, especially for planking, and it appears at present to be gradually rising in value in the Mysore market.

4. *Beety* (*Blackwood*).—There is a very large quantity of this timber in the forests, but it is held in little estimation. It is said, however, to fetch high prices at Bombay, and as soon as the new road from the Coranacote forests is fairly opened, it might be sent there through Tellicherry.

5. *Mutty (Karra marada in Tamil).*—This is by far the most plentifuly distributed timber throughout these forests. It does not ordinarily attain a great girth, but is often very tall

and straight, and is well suited for beams for bridges, as it is not much affected by moisture. It is, also, but little touched by white ants, and is said to be one of the best timbers for railway sleepers. There is little or no demand for it in the Mysore market.

6 *Bellay mutty (Benteak) called also "Nuncey"* in Mysore and Coorg, and six Dindaloo (Vellay Nagalu in Tamil) are in little request, though both good timbers.

7. Kadhalsana (Wild Jack). This is the Ayang or Anjaley trees of the Tamils. It is found chiefly on the outskirts of the forests on the Wynaad side, and is not to be seen near the Mysore frontier.

8. Hettagah or Arasantaigah is seldom or never enquired for, though it is, I believe, the timber chiefly used in the Mysore country for the stronger parts of carts.

Teak has had so high a value imparted to it, on account of its supposed entire immunity from the attacks of white ants, that there appears to be an almost universal desire in Mysore, where all the Wynaad timber has at present to be sold, to dispense with all other timber, though some of these would, in many cases, answer almost equally well.

2. *Seignorage on timber.*—The Collector is of opinion that ryots should be permitted to fell all timber required for themselves entirely free of any seignorage, except those especially reserved, which they can only procure by purchase from the Forest department. The timbers thus reserved are those mentioned in the foregoing paragraph. No seignorage has ever been collected on timber felled by ryots as above specified. The system of granting free licenses for cutting unreserved timber in Government forests might, however, be advantageously introduced into this district.

3. *Seignorage on Bamboos.*—No bamboos are exported from the forests, all those cut being used on the spot: no seignorage has therefore been derived from them, nor is likely to be for some time to come.

4. *Position of Government forests.*—The Government forests are contained in the Ellornad Gannapadeywuttum and Moonanad Amshoms of the Wynaad taluq. I have included within the reserved forests, portions of forests in which there is no teak, when the other timber in them has been valuable enough to render such a course advisable. There is also a small strip of forest land in the Poodhardy Amshom, between the Cuppany river and the Poolpully Deshom, which indisputably belongs to Government. The Moopeynad Amshom, though escheated, was not included in those originally given over to the forest department, and as it does not contain much timber of value, I have not thought it necessary to include it in the demarcation.

5.—*Demarcation and Survey.*—The carrying out the demarcation of the forests has occupied a much longer time than it was contemplated by Mr. Richardson, the late Deputy Collector of Wynaad, that it would. He stated that four months from September 1866, would be sufficient for the work. The rains, however, lasted till so late, both in that and in the following year, that it was not possible to begin work till November in each year; and, although the rates of pay allowed for the necessary establishment were very fair, it was difficult to get the complement of Gomastahs and Peons sanctioned by Government. This is to be accounted for by reason of their being unwilling to undergo the risk of fever for what they knew would be only temporary employment. Regular stone-cutters were not to be had at all, and I therefore employed the peons on that work, paying them one rupee for cutting marks on every eight stones in addition to their monthly pay. The marks are therefore but roughly cut. As it was not possible to get large stones moved from place to place without incurring great expense, the best stones procurable close by were put down, and these in many instances were only procurable of small size. Major Hessey recommended that a boundary path in a straight line should be cut from stone to stone. To have regularly cleared a path that would always remain open was out of the question in a climate like that of Wynaad, where even a made road, if not kept in constant use, becomes perfectly overgrown in a single monsoon: the broad boundary path which was cut along a portion of the Mysore and Wynaad boundary some years ago is now undistinguishable from the rest of the forest. Should the exact position of the boundary stones be hereafter

required for surveying the forests, this can be easily ascertained by the description of the course of the boundary line in paragraph 6 of this report, where all the chief points of the boundary are described. I am not aware that the whole or any portion of the Wynaad forests has been surveyed since the Trigonometrical Survey in 1817 and 1818. It has always been difficult to get surveyors to stay in the forests the necessary length of time. I may add here, that when it was found that the cost of the elephants to be employed in carrying about tents for the demarcators, had to be met from the sum (Rs. 1,000) sanctioned for cutting boundary stones, &c., I dispensed with the use of it altogether, with the concurrence of the Conservator of Forests. Only one elephant was at any time employed on this work.

6. *Map and description of boundary line.*—I have endeavoured to make the rough map of the forests which accompanies this report as reliable as possible; it has been compiled chiefly from the printed Trigonometrical Survey map of four miles to an inch, as the enlarged copy of that map issued by the Revenue Survey Department, has not been found so correct as the other. A portion of Mysore is also shewn to enable the distance to the various depôts to be distinguished at a glance. The boundary of the forests is as follows:—Commencing at the north-west corner the boundary line starts from the boundary of Coorg where the "New Karkairy" coffee estate called by natives the Soolabaly estate, and the Coorg boundary meet. It goes south westward and along the boundary of a small native estate and the "Karkairy Estate" up to the place where the new Coorg road enters the "Middleton Estate," which last estate is in Coorg. At this point the forests are bounded on the north by Coorg for nearly 200 yards. From this the line goes along the old Coorg road or track, taking a bend to the westward to the Tolputty paddy flat, and then again running along the old Coorg road to a short distance southward of Bellary paddy flat. From thence it passes through the Bellary Jain Cooroobers, Hardy and on to the boundary of the old Tirumally coffee estate, skirting the boundary of which, it runs into the new Coorg road and then back again to the old Coorg road, at the place where it crosses the stream coming from the Tirunelly pagoda hill. The boundary then passes along the old Coorg road till it reaches the Bowlypoyah, which it crosses, and skirts the Reading Coffee estate up to the top of the ridge called Kirpady bettah. It runs eastwards along this ridge for a short distance and then descends to the Bowlypoyah near the ford close by the Vagoormullah coffee estate.

N. B.—About 1½ mile north of this ford, and on the new Coorg road, there is a small coffee estate, called the "Winterther," belonging to Mr. Sigg, which is entirely within the reserved forest: this estate has been separately demarcated all round. From the Vagoormullah ford the boundary skirts the Vagoormullah and Allator estates, till it reaches a stream called the Kakapoyah coming from Allatormullah. It runs then along this stream and the boundaries of the Cartocollah and Collissie estates to a spot on the main road from Manantoddy to Mysore which is 1¼ miles from the Traveller's hut at Bowalley. The boundary is then continued along this road as far towards Manantoddy as the bazaar at the side of the road at the Cartacollum estate, from which it goes north-eastward to the Cuppany river at a place called Kikkairy nearly opposite to Shahyuddy. From this the boundary runs southward and eastward, being formed for a short distance by the Cuppany river and then by the Moondum Tod up to its sources, near a place called Kapu. A great portion of the land hereabouts is claimed by the Vailumbutty and Paukum pagodas, and if ever their claims be admitted, I would strongly recommend that the Moondun Tod be preserved as their northern boundary, as natural boundaries are far preferable to arbitrary ones. From what I could gather, it would appear that the boundaries of the Vailumbutty, Poolpully and Poodhardy pagodas adjoin each other close to this. I have left the portion from here to the other side of the land claimed by the Poodhardy Nair, namely, Poolpator near Sultan's Battery, undemarcated—for, first, the Poodhardy Nambiar's claims have to be adjudicated; and, secondly, he says that we have so demarcated the Poolpully Temple forests as to encroach on his. These disputes can only be settled by the regular Revenue authorities, and their settlement in Wynaad is always a matter of time. I brought the claims made by the Vailumbutty

and Paukum pagodas to the notice of the Deputy Collector at the commencement of last year (1867), but have heard no more of them since than of that made by the Poodhardy Nair.

From Poolpatoor, about four miles west of Sultan's Battery, the boundary line runs eastward along the main road from Manantoddy to Sultan's Battery till just before the junction of the road from Culputty where the line turns off to the northward and eastward, passing through the Coffee Estate of Baramal Chetty and through Cattarath, Coopatod, Vaingor, Pallairy, Poodacode, Narraicolly and Taycartu, to a spot on the new road from the Battery to Goondulpet, about half a mile from Naikutty Angady, then along this road to the Cullair river at Tirvanoor swamp ; the line goes two miles up this river and in a direct line from there across country to a swamp midway between the 22nd and 23rd mile from Goodaloor to the Battery on the main road. It goes along this road for one mile, when the line turns to the southward for a short distance and again comes into and crosses the Goodaloor road at Pootoyle. The boundary then goes along the old Tippacadoo road to Nellicottah, and a little beyond it ; it then goes to the Arracuddoo stream, being brought straight across a bend of the road and then skirts the old Tippacadoo road to a place called Yellay hill, where there is an old demarcation stone. From this point to the Nardy Tod, where it crosses Major Morgan's main cart road, two and a half miles eastward of the elephant establishment, a distance of about four miles in length, is the portion mentioned as demarcated by the Acting Collector of Malabar, in his letter No. 18 of the 21st January 1864 published in the Proceedings of Government of 18th February 1864. I was unable to ascertain the boundary between Moodoomully and Wynaad forests north of the Nardy tod to the Mysore frontier, and have consequently not ventured to demarcate that portion of the forest boundary.

7. *Poolpully temple forests.*—This forest contains an area of from 20 to 25 square miles, and is chiefly valuable for the teak contained in it. The treasurer, or trustees, of the temple, having refused to lease it to Government, have leased their forests for 20 years to a native, who is felling to such an extent, that, in two years probably, there will be no teak left in it. This lessee is also selling at such low rates, that the price of teakwood in Mysore has already declined, and the market will probably be swamped altogether in a short time. But this may act as its own remedy, as he will be compelled to stop felling if he cannot sell the timber felled. The boundaries of this forest were roughly marked out by Major Gib and the Tahsildar of Wynaad, and have since been regularly demarcated. The boundaries are as follows :—

North.—Cuppany river.

East.—Cannagal hollay, otherwise Cannaram tod.

South.—Pamry, or Avaracolly tod, Sheumbeth tod, Tallay Sheumbeth vyle, Chamacolly tod, and Karaduardy mullah.

West.—Tong vyle, Eringryot tod and Kadiman tod.

8. *Padry Forests.*—This is a small piece of forest containing some three or four square miles : it has some very fine teak in it. In 1863, or 1864, one Nunjah Gowdah sold 100 acres of land here for a coffee estate, whereupon Major Gib, who was then in charge of the forests, interfered, as this part of the forest had always been considered Government property. It was decided however by the Deputy Collector of Wynaad that Nunjah Gowdah's claim to the land sold was valid. I understood from Major Gib that only the portion actually sold by him had been admitted to be his, and, therefore, when he commenced felling teak in the neighbourhood at the beginning of 1867, preferred a charge of theft against him which was dismissed by the Deputy Collector, who then proceeded with me to Padry to decide on his boundaries, and informed me that the boundaries formerly enumerated by a Revenue Inspector, who was sent to demarcate this land when a portion was sold for the above mentioned estate, were correct. The amount of demarcation done by this Revenue Inspector consisted in placing a few stones along a portion of the western boundary only. This piece of land has therefore been demarcated all round. It adjoins the Poolpully temple land on its eastern side. The following are its boundaries :—

North.—Hooshully swamp.

East.—Kadiman tod.

South.—Kadiman Hooshully tod and vyle.

West.—Padry vyle and Padry Nunjah Gowdah's house.

9. *Poodhardy Amshom.*—The greater portion of the Poodhardy Amshom, including the valuable teak forest of Pamry, is claimed by the Poodhardy Nambiar. This claim has not yet been decided by the Collector, and therefore the land claimed has been left undemarcated. The boundaries as given by the Nambiar's agent, are as follows:—

North.—Pamry or Avaracolly tod, Sheumbeth tod, Tallay Sheumbeth vyle and Chamacolly tod.

East.—Cannagal hollay, Vairch tod and Pulpator vyle.

South.—About half mile south of and along the road from Manantoddy to Sultan's Battery from Potangally to Pulpatoor.

West.—A line from near Vailembutty through Potangally to half mile south of the Manantoddy road. The southern and western boundaries are arbitrary. The northern boundary is in part the same as the southern one of the Poolpully temple land. There is no forests of consequence, excepting in the northern and eastern parts of the amshom.

10. *Temple lands whose claims have been disallowed.*—The claims to certain portion of the forests by the Trichillary and Tirunelly pagodas have now permanently been disallowed by the Secretary of State. I do not think any of the land now left is suitable for anything but coffee, except the Coodracote forest, and that part demarcated which has always been under the charge of the department since Government began to conserve the forests. The remaining portion of the forest has never been formally given over to the department, and its extent seems not to be known. For information of Government, I attach a letter, No. 109 of the 12th December 1867, asking for information on the subject from the Deputy Collector, and his reply, in which he encloses a list of lands *already sold* for Coffee estates by the two Pagoda trustees, and states that no more information than this can be obtained from the records in his office.

11. *Removal of Timber from Forests.*—At present timber can only be removed into Mysore. That from the Kurper Eechevon and Thoramungal forests, a little to the north east of Sultan's Battery, is removed to Mahabuktunpoor by a cross-country track which crosses the Noogoo river at Ramporford. The greater part of the ripe teak in these forests has been felled. The Noogoo, though a large river in the monsoon, is not suitable for floating timber, owing to the rocky nature of its bed and its rapid current. The timber felled near Coorchiart and Chedaleth is carted to the depôt at Goondry on the Cuppany river, and thence floated down to the depôt at Hirnandy, about 50 miles as the river runs.

12. *Labor in the Forests.*—The only labor to be had in the forests is that of the Bet Cooroobers, who are very expert axe men. A few Jain or Honey Cooroobers are also obtainable, but they can only be employed on rough buildings or repairing roads. I have never been able to get any surveyors to work in the forests. It can easily be understood that any kind of skilled labor must be hard to get, as the resident population is very small and scattered. In the Coodracote forest it is now extremely difficult to get Cooroobers, as most of them have gone to work on the Coffee Estates near it.

13. *Forest Establishment.*—It is hard to keep the establishment of the forests in such good order as it should be, as from the unhealthiness of the climate, persons employed in the forests are constantly changing. The number of peons allowed, 10, is not in my opinion sufficient for the work, as some two or three must always be left at the depôts. The pay of the peons too, only Rupees seven per mensem, is insufficient, as Wynaad is undoubtedly one of the most expensive parts of India. The peons are certainly allowed a coat and a cumbly each annually, but, without warm clothing of some kind, they would be sickly more than they are,

14. *Leases.*—In the event of the claims of the Poodhardy Nair being admitted, it would, in my opinion, be very desirable to obtain a long lease of the Pamry forest, from which timber can be easily removed to our depôt at Goondry.

15. *Plantation.*—The best place for a plantation, if one ever be undertaken, would be, as formerly suggested by Major Gib, near the Cannaram tod or Cannagal Hollay, near the spot on it where the Poolpully boundary commences, this being on the direct road to Goondry depôt. This stream has the advantage of being never dry in the hottest weather, and would therefore be well suited for watering the young plants in dry seasons.

16. *Depôts.*—The following are the four depôts which are all in the Mysore country :— 1, Antersuutlah Depôt for sale of timber from the Coodracote forest, from which there is a rough cart track ; 2, Goondry depôt for storing timber previous to floating; 3, Hirnandy depôt for sale of timber floated from Goondry ; 4, Mahabuktumpor near Coomagul depôt for sale of timber from Thoramangal forest. The last named is rather inconvenient, as it is out of the way for purchasers and far from the forests.

17. *Prospects of Coast trade.*—On enquiring of the Engineer at Cannanore, a short time back, whether he required any timber for his department at that place, he replied that he did not, and that there was no demand for teak or blackwood at Cannanore. It would not, I think, answer to send any timber to the coast just now, as the rates of cart-hire are very high. The new road through the Coodracote forest, moreover, is not yet open, and contractors will not cart into Manantoddy under Rupees ten per bandy load or eight Annas per cubic foot. The rate from Manantoddy to Tellicherry or Cannanore would be at least Rupees 15 per bandy load, or 12 Annas per cubic foot more, making in all Rupees 1-4-0 for cart hire alone. We could not thus well afford to sell for less than Rupees 2-4-0 per cubic foot at Cannanore, that is, if bandies could be obtained from Manantoddy for Rupees 15, which is doubtful. It would perhaps be better at first for the department to get a few carts of its own until the trade with the coast has been fairly established, when no doubt cartmen would begin to contract readily enough.

18. *Boundary of Mysore.*—The boundary between Wynaad and Mysore was adjusted in 1863 and 1864, and boundary stones were laid down by Major Gib. These stones are, however, at considerable distances from each other, and, as the boundary path has long since become invisible, disputes are ever likely to occur.

19. *Demand for timber by Public Works Department.*—There is but little demand for timber by the Public Works Department, and, as there are no buildings of importance in the district, they are not likely to require much. I offered some time ago to supply teak at Manantoddy at from Rupees 1-8-0 to Rupees 1-9-0 per cubic foot, but the offer was not accepted.

20. *Koomry or Takkal.*—The Chetties, who cultivate rice in nearly all the swamps throughout the forests, have always been accustomed to have one or more temporary forest clearings, or takkals as they are called in this district, for raising ragi to feed the Panniars who labour in their fields. As long as they do not encroach on forests that contain valuable timber, this is not of so much consequence, but, as they wish always to fell fresh forest, the soil of which gives a larger yield, they are apt to do so. Another reason for their wishing to fell fresh forests for this purpose is that in a place which has been cleared in this manner, the weeds spring up so thick after crop, that it is generally from 8 to 10 years before it can be used for growing grain again. The forest Cooroobers are also in the habit of making these clearings. Whatever orders may have been issued by the Revenue Authorities on the subject, it appears to be considered, not only by the Chetties and the jungle tribes, but also by the Subordinate Revenue officials, Tahsildars, Adigharries and Mokistums, that the practice of "takkaling" forest is of no bad consequence, so long as the parties who do so restrict themselves to the felling of trees other than those more especially used for timber ; while, as these clearings are always burnt, they do a great deal of injury to the timber trees left standing in the cleared land, the growth of which is retarded, both by the scorching from the fire, and the undue exposure

from the removal of the bulk of the wood growing in their vicinity. In addition to the injury done to large trees in this way, saplings that are not of more than one or two years' growth are entirely destroyed in a great many cases. As it would appear to be the intention of Government (from their receiving revenue from these clearings) that persons inhabiting the forests should be allowed to clear land thus in places where no valuable timber is likely to be injured, I have not brought forward the parties for punishment in such cases. Indeed, in many instances Cooroobers will not stay in the forests unless allowed to have a clearing somewhere, and it is much better that this should be permitted openly in known spots, as otherwise they are likely to fell a piece of good forest land in a place which they consider remote enough to prevent discovery. In every case or nearly every case where good forest land has been felled and cleared, the persons who have been engaged in doing so say that they previously received permission from the Adigharry of the Amshom, which is, I have no doubt, perfectly true, though always denied by the Adigharry himself questioned on the matter. These takkals in forest land have been put a stop to pretty well, but until the Adigharries and their assistants are compelled to do their duty and report every case that they know of, (for they must know of every case that occurs, since they receive the revenue paid to Government for the land) they will always be taking place more or less. There are numbers of places where a " takkal" can be made without injury to valuable timber.

21. *Revenue from miscellaneous forest produce.*—No attempt at realizing revenue from this source has ever yet been made, and I hardly think that the attempt would be worth making. A great quantity of "kino" used to be collected from the Vengay and sent to the coast, but of late years this has ceased, probably from kino not being in such request as formerly.

22. *Portion of forest worked by Moodoomully Establishment.*—That portion of the Government forests from the western boundary of Moodoomullay up to the new road from Sultan's Battery to Goondulpet, has been worked by the Moodoomully Establishment for the past seven or eight years, as the timber can thus be removed to Ootacamund as well as to Mysore ; and, as there is a much greater demand for it at the former of these two places, the arrangement is advantageous to Government. The accounts connected with this portion of the forests are not included in those of the Wynaad forests.

23. *Expenses of Demarcation.*—An account shewing the sums expended in demarcating the forests is attached to this report. From this it will be seen that out of the sum of Rs. 1,608-0-0 authorized by Government, Rs. 505-2-3 have been expended in salaries to the Temporary Establishment, and Rs 774-9-10 in cutting stones, &c., leaving a balance in hand of Rs. 329-3-11. This balance might be applied to the completion of the small portion yet to be demarcated. The expenses of demarcating the piece of land alluded to in para. 8 are included in the above, and I await the order of Government as to whether they should be recovered from Nunjah Gowdah.

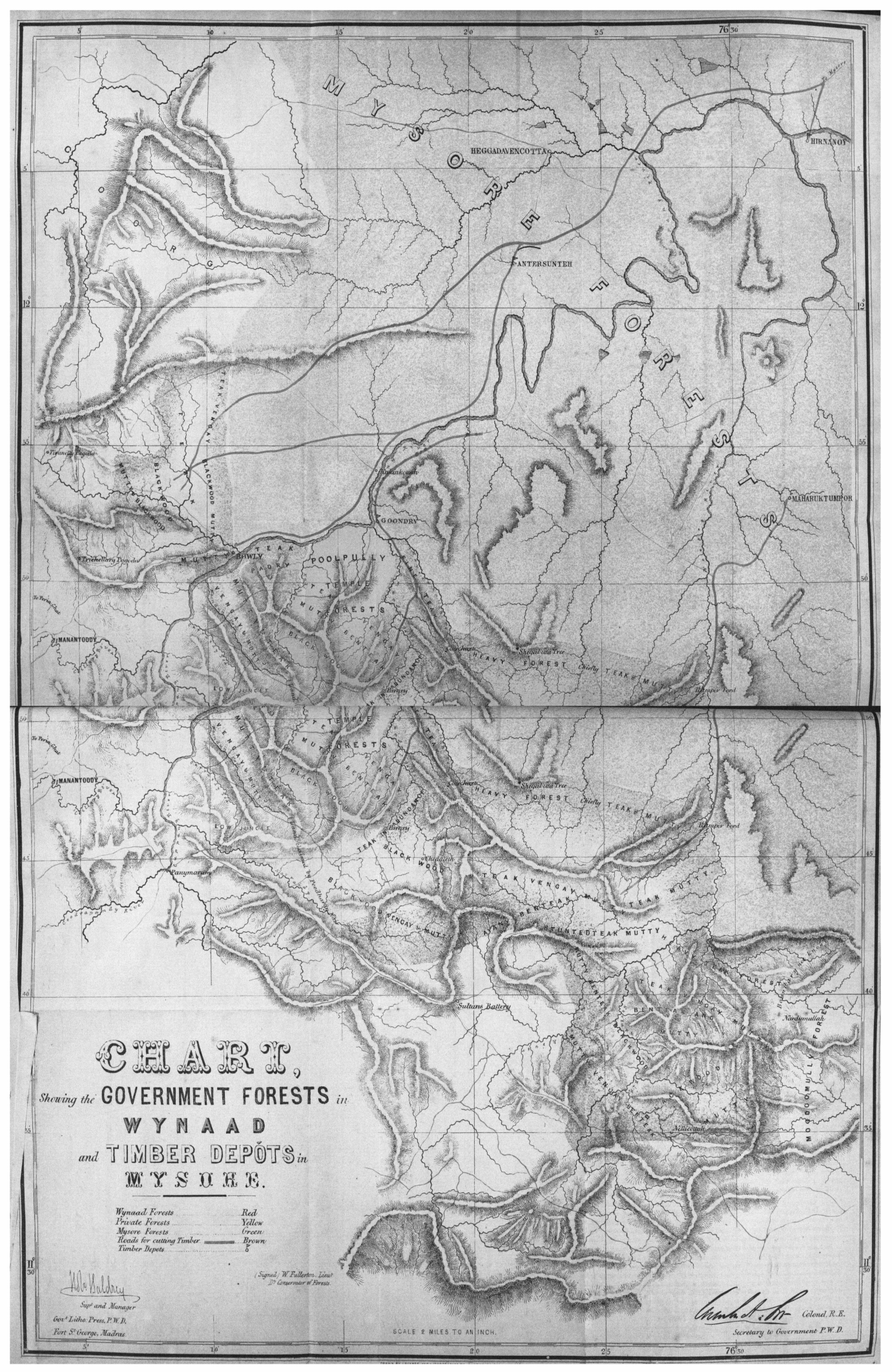
24. *General Remarks.*—I have carried out the orders of Government to the best of my power, and hope it may be to their satisfaction. The work has had to be performed at just the time of year when the ordinary forest work is heaviest. A portion of the boundary between Moodoomullay and Wynaad had been cleared by Major Morgan, and, had it not been for this, the demarcation of that part would have taken much longer. No coolies were procurable, and I had to take the forest Cooroobers from Chedaletty with me. With reference to the time taken in the demarcation, I hope I may be permitted to add that it would probably have been done quicker by the Deputy Collector, as he would have been able to obtain demarcators who knew their work from those placed under his orders for the demarcation of estates, and the Adigharries or Heads of villages would have been more ready to assist him in procuring labor and in giving him that local information which is so necessary when engaged in works of this description, and for want of which the work is often delayed for days. There will be no difficulty whatever in completing the small portion of the forest boundary that I have left undemarcated in a few days, as soon as it is once settled what belongs to Government and what does not.

I have the honor to be, &c.,

(Signed) WILLIAM FULLERTON, Lieut,

Deputy Conservator of Forests.

MANANTODDY, 27*th February* 1868.



CHART,

Showing the **GOVERNMENT FORESTS** in

WYNAAD

and **TIMBER DEPÔTS** in

MYSORE.

Wynaad Forests	Red
Private Forests	Yellow
Mysore Forests	Green
Roads for cutting Timber	Brown
Timber Depots	P

(Signed) W. Fullerton. Lieut
Dy Conservator of Forests.

J. de Baldrey
Supt and Manager
Govt Litho: Press, P.W.D.
Fort St George, Madras

SCALE 2 MILES TO AN INCH.

Colonel, R.E.
Secretary to Government P.W.D.

APPENDIX X.

NELUMBUR, 19*th April* 1868.

From

MR J. FERGUSSON,
Assistant Conservator of Forests.

To

MAJOR R. H. BEDDOME,
Officiating Conservator of Forests.

SIR,

I have the honor to forward the Annual Report of the Nelumbur forests for the official year 1867-68.

2. *Timber felling.*—Owing to the large stock on hand from former years lying in forest unsold, felling has not been prosecuted. Contracts for floating were not obtainable at fair rates, and four hundred and nine logs were floated by the establishment.

3. Hired elephants were employed for the small number of logs rafted and floated this season. Country elephants being accustomed to this particular work, are better than the Commissariat cattle, although they are powerful for dragging logs from the forest. Great difficulty is experienced in procuring country elephants without making large advances, which is disallowed, excepting when it is to be worked out within a short period, small sums are given.

4. Cash realized by private sales amount to Rupees 3,096-15-3 and value of stock in Calicut depôt Rs. 5,441-14-8, and of stock in forest Rs. 34,665-0-7, aggregating Rs. 40,106-15-3, to be accounted for in 1868-69.

5. *Plantation.*—Teak seedlings planted out during the year amount to 105,000, these with the old ones are now looking well after the early showers, but the dry season has been unsually severe, and gave them a parched stunted appearance. Weeding has been carried on more extensively than in former years, and a new operation, viz., removing a parasite (Loranthus) from the plantations has to be performed, entailing much dangerous work. 400 acres have been cleared, and will have to be *repeated* and closely watched in future. In the adjoining natural forests, parasites are not kept down, and they spread very fast, producing quantities of seed which are eaten by birds who in turn deposit them on the trees, and from its fleshy coating, sticks like gum to the branches, where it germinates and grows exceedingly rapid and unchecked; kills numbers of trees, but if early removed, the tree suffers little or no material damage. The mode adopted is, the branch attacked is fore-shortened, so as to remove the part affected, and if needs be entirely removed by pruning close up to the stem of the tree.

6. In addition to Teak seed, there has also been sown for experiment Black wood and several junglewood seeds. Grains and vegetable will be tried and reported on during the current year.

7. *Trespasses.*—None have occurred worthy of particular remark. The Brinjaries carrying coffee down to the coast were careless in allowing their cattle to enter and graze in the plantations along the line of road, but in the opening of the season one bullock was pounded and the owner, fined two rupees, which had the desired effect, preventing little more annoyance on that score. But by and bye there will be less of this, as the Carcoor road is now open for carts from Goodaloor to Ariacode. Some of the rivers have been for this and will for the next seasons be crossed by service bridges, and probably the permanent ones will be completed the following season. The Coffee planters may well feel grateful to our excellent Collector and Officers of the D. P. W. of Malabar, through whose indefatigable labors they can now drive from Goodaloor to Calicut in their vehicles.

8. Fever as usual has been severely felt by the Establishment, greatly retarding operations. I had a severe attack myself. Dr. Brockman who prescribed for me, ordered a change and Major Beddome, Officiating Conservator of Forests, kindly granted me three months' privilege leave, two of which I availed myself of, and have been much benefited therefrom.

9. *General remarks.*—This year we have been unsuccessful with our sales, caused by the depression of the Bombay market and scarcity of tonnage (for transport from Calicut elsewhere) which has been greatly taken up by the Abyssinian Expedition, incurring greater risk to the dealers in buying stock for the next year's demands. They do so only at a sacrifice to the seller. As already said, four hundred and nine logs were floated during the season. All the junglewood, 369 logs, were sold at a low figure in January, and although paid, not yet removed for want of shipping. Teak one rupee per cubic foot was offered, thinking it better to retain till another year, was not sold at that price. Saplings in the depôt have been stored for two seasons and deteriorated a little. Merchants kept off, thinking to break down our prices, which are barely remunerative. No saplings were floated this season. Contracts could not be obtained at fair rates We tried floating with the establishment, and preposterous rates were demanded by the workmen. 50 per cent above the usual rates were offered, but none came forward. The duffadars seemed dissatisfied that no notice had been taken of the application for an increase to their salary in February 1867, and left under plea of sickness; others could not be got till the season was past. At the end of October, Rs. 25 was sanctioned for a floating duffadar, but others were unwilling to take up the post, looking on the old hands as out on strike, but had the increase been sanctioned before the floating season, I have every reason to believe matters would have been very different. Most of the stock floated and very probably more junglewood and the greater portion of our saplings sold, and we would at least have (or nearly) cleared our expenses, instead of shewing a large deficit. True, part of the increase was sanctioned to have effect from the 1st April 1868, which I trust will be appreciated. I regret the Conservator of Forests overlooked the advantage of having people employed who feel satisfied they are sufficiently paid; the salaries asked were not so high as paid to the same grades in the Department Public Works in this district, and if I may offer an opinion, I am sure other Establishments are not kept more closely in harness They attend Office at 6 A. M., are enrolled and proceed to the working ground (often 5 miles distant), returning to office again in the evening, reporting occurrences, and are dismissed about ½ past 6 P. M., and this from the one year's end to the other. The great amount of the work to be got through with in each season requires constant exertion on the part of all concerned. Really good men decline the posts on present salaries from the many openings in coffee plantations and elsewhere.

9. *Operations.*

Planted	105	acres.
Weeded	2,500	„
Pruned	692	„
Parasites removed	400	„
Site for fresh planting felled and burned	130	„
Timber logs felled	None.	
Saplings felled	9,600	
„ collected	16,000	

		Rs.	A.	P.
10.	Receipts for the year	3,096	15	3
	Disbursements	14,557	3	10
	Balance against the forest	11,460	4	7

Financial Results, vide page 22, paragraph 183.

I have the honor to be, &c.,

(Signed) J. FERGUSSON,
Assistant Conservator.

REPORT

OF THE

CONSERVATOR OF FORESTS,

FOR THE

OFFICIAL YEAR

1868-69.

MADRAS:

PRINTED BY H. MORGAN, AT THE FORT ST. GEORGE GAZETTE PRESS.

1869.

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OFFICE OF CONSERVATOR OF FORESTS:
CAMP OOTACAMUND, 1*st April* 1869.

From

MAJOR R. H. BEDDOME,

Officiating Conservator of Forests;

To

R. A. DALYELL, ESQ.,

Acting Secretary to Government, Revenue Department,

Fort Saint George.

SIR,—I have the honor to forward the Annual Report of my Department for 1868-69.

2. In May I visited the Bolamputty and Sholay Kurray Forests, and in June the Salem Range, in July the Denkenacottah Forests, and in August the Anamallay and Cuddapah Forests, and proceeded on a tour through the Bellary District with a view to selecting sites for locomotive fuel plantations. In September I went a tour with Captain Seaton, the Conservator of Forests in Burmah, and we visited the Nellambur plantations, a part of Wynaad, and the plantations on the Neilgherries. In October I again visited the Bolumputty Forests and the Anamallays and the new ghaut operations, and in November and December the forests of the Madura District. In January and February I was engaged in a tour in South Tinnevelly, and in March I visited the Wynaad Forests and the depôts in Mysore, the different plantations on the Neilghirries were also constantly visited.

3. GOMSUR.—*Superintendence.*—These forests have remained under Overseer MacCally during the year.

4. *Increase to Establishment.*—The Overseer was promoted to 1st Class on the 1st April 1869, and then was also a small addition made to the pay of the peons, etc., (Vide G. O. No. 2,533, dated 2nd October 1868).

5. *Operations.*—Conservancy was well attended to. The forests remain under the Voucher and License system, but some tracts are reserved and worked departmentally, and the Department Public Works have been allowed to fell in some cases.

6. *Village Fires.*—The Overseer reports that Village fires are very prevalent, and that they generally occur from gross carelessness, and that the custom of giving timber free of any seignorage for the rebuilding of all houses destroyed in this way greatly tend to enhance the number of the annual fires. 502 houses were burnt during the year, and 2,247 bandy loads of timber granted free in consequence.

7. *Theft, Mischief, etc.*—Seventy-three persons were prosecuted during the year for Forest Offences and in all cases sufficient punishment was awarded.

8. *Health of Establishment.*—This was bad, fever having been very prevalent.

9. *Financial Results.*

	Rs.	A.	P.	Rs.	A.	P.
Expenditure.						
Establishment	1,992	0	0			
Office contingencies	76	10	0			
Working charges	1,227	4	3			
				3,295	14	3
Receipts.						
Sales from depôt	106	10	0			
Seignorage	4,481	5	9			
Confiscations	41	10	0			
Timber supplied to D. P. W.	1,609	11	0			
				6,239	4	9
Balance in favor of forests				2,943	6	6
Timber on hand, 31st March 1868	1,135	10	0			
Add felled during 1868-69	1,644	15	0			
Total...	2,780	9	0			
Deduct sold during 1868-69	1,716	5	0			
Value on hand, 31st March 1869	1,064	4	0			
Deduct deficiency in stock				71	6	0
Financial results				2,872	0	6

10. Golcondah.—These forests have remained entirely under the Collector the expenditure amount to 904-12-4 and the receipts to 377-11-8.

11. Cuddapah.—*Conservancy.*—Mr. Yarde has remained in charge of these forests, he has constantly travelled about his range. The License and Voucher system remains in force with the exception of the working of Red Sanders roots and stumps which is now departmental, much attention, however, has been paid to regulating what tracts are to be worked and what require rest, and the usual operations of clearing away creepers, etc., have been regularly attended to.

12. *Operations.*—No timber has been felled departmentally for the depôt, as the supply was equal to requirements. The receipts under the Voucher and License system have averaged about 3,000 Rupees per mensem.

13. *Depôts.*—The public have purchased to the value of Rupees 687-4-8 from our building timber depôt.

With the sanction of the Collector, the working of the roots and stumps of the dye wood (Red Sanders) has been undertaken by the department, and a depôt has been formed, the profit will be considerable.

14. *Timber granted free.*—Free passes have been granted to the ryots for 242 bandy loads of unreserved timbers, and a large quantity of bamboos.

15. *Theft and mischief.*—Sixteen cases were prosecuted during the year, one only, in which three persons were concerned, was dismissed; punishments of small fines and short imprisonments were awarded in the other fifteen cases in which fifty-two persons were concerned. The punishment is generally too lenient.

16. *Timber for the D. P. W.*—The Public Works Department have taken no timber from our depôt during the year, but they have removed timber from the forests to the value of Rupees 250-4-0.

17. *Confiscation.*—Two hundred and thirty-three bandy loads of timber trees were confiscated during the year, it was chiefly timber cut on time-expired licenses,

or timber of higher value than that for which the licenses had been granted; the sale realized Rupees 1,443-15-0.

18. *Some increase to Establishment necessary.*—To effectually check smuggling, a further increase to the establishment seems called for, and is authorized by the large revenue; the subject is under the consideration of the Conservator.

19. *Plantations.*—The year has been one of great drought and most unfavorable for planting operations. The trees planted out last year are healthy and growing well, but most of those transplanted from the nursery beds this year have failed. A further attempt at sowing Babul (Acacia Arabica) and Nim (Melia Azedarach) broad-cast was made, but has proved a failure, the seed generally germinated, but afterwards succumbed to the heat and drought; it will not be attempted again, it might answer well in the humid climate of our Western Coast, but is not suited to our dry districts. A large plantation near Cuddapah on the banks of the Papugnee river was commenced by the Collector from Local Funds, it has now been handed over to our department and was taken over by Mr. Brougham together with a large tract of land near Gooty and another at Chittravutty on the 1st of May, just after the close of the official year.

20. *Cattle Trespass.*—Cattle trespass in our plantations is very common and difficult to prevent, the punishment given when trespass and damage is clearly proved is never sufficient to keep this offence in check, and the pound charges as in other districts are too small.

21. *Health of Establishment.*—Mr. Yarde and nearly every one on his establishment have suffered from jungle fever, no death has, however, occurred.

22. *Financial Results.*

	RS.	A.	P.	RS.	A.	P.
Expenditure.						
Establishment	6,388	0	0			
Working charges	3,864	0	0			
Contingencies	107	12	0			
				10,359	12	0
Receipts.						
Seignorage on timber	20,539	1	0			
Do. bamboos	529	4	0			
Do. firewood	2,483	8	0			
Do. charcoal	382	7	0			
Do. locomotive fuel	11,806	8	2			
Confiscated timber	1,443	15	0			
Sale of depôt timber	687	4	8			
Timber for D. P. W.	250	4	0			
Miscellaneous	322	0	0			
				38,444	3	10
Balance in favor of Forests				28,084	7	10
Value of timber in depôt on 31st March 1868, viz., cubic feet 5,811-11¾	6,868	9	7			
Add felled during the year	10,972	0	8			
Total	17,840	10	3			
Deduct sold	687	4	8			
Value of timber* and Red Sanders in depôt on 31st March 1869	17,153	5	7			
Add surplus stock of timber				10,284	12	0
Financial results for the year						
Profit				38,369	3	10

* Timber cubic feet 5,261½, Red Sanders 10,86,293, lbs. at Rupees 8 per 1,000 lbs.

23. KURNOOL.—*Superintendence.*—Mr. Sheffield has remained in charge of these forests throughout the year, they are still worked almost entirely on the Voucher and License system.

24. *Operations.*—The usual clearing of creepers and undergrowth, etc., has been carried out, but the Assistant Conservator reports that conservancy has not received as much attention as he could wish, as the establishment has been much disorganized by fever.

25. FOREST MAP.—*Demarcation, etc.*—The Assistant Conservator has drawn up a very good Forest Map, but it has not yet been lithographed. Blocks of forests for the manufacture of charcoal for the iron forges have been marked out, and felling for this purpose is restricted to these tracts. The forests have also been divided into three divisions, *viz.*; 1st, strictly reserved tracts for departmental felling; 2nd, forests open to Voucher and License; 3rd, forests open for free felling but also open to Voucher and License. The proposed reserved tract is about 20 square miles not one-fifth of the whole forest, and if the Collector sanctions it, it is proposed to obtain the sanction of Government for demarcating this portion and making it a strict reserve; it comprises the chief part of the forest between the Nundy Canama and the Yellagode Canama Ghauts. The rest of these hills will then be open to Voucher and License felling and the forests about the foot of the hills, a tract of about three miles in depth for free felling for the ryots, but felling on Voucher and License will also be allowed in the latter.

26. *Roads.*—The road sanctioned in the Government Order, No. 2,580, of the 1st November 1867, of which four miles were opened out last year has been completed during the year to the foot of the hills, a further distance of three miles, at a cost of Rupees 2,500, which sum was met from our Budget.

27. *Depôt.*—It has not been necessary to fell more timber for the depôt during the year; 4,000 cubic feet of timber which remained in the forest last year has been brought out to the Nundyal Depôt, 503 cubic feet have been supplied to the public, and 1,561 cubic feet to the Department Public Works.

28. *Telegraph poles.*—2,510 telegraph poles have been supplied during the year to the Telegraph Department, they were all cut from Chiriman (Anogeissus latifolius) a tree very abundant in these forests, to guard against wasteful felling they were all cut by the department.

29. *Elephants.*—The two elephants employed in these forests are a great expense; at some seasons there is a scarcity of water for them, and the demand for timber of large scantling is scarcely sufficient to authorize their being kept on in this district, they will, therefore, be removed next June or July to the Anamallays where their services are much required.

30. *Timber removed on License.*—The following has been removed from the forests during the year on Voucher and License by payment of seignorage.

Reserved timbers,	6,277	bandy loads.	
Unreserved do.	10,425	do.	
Bamboos	6,397	do.	and 7,969 Head loads.
Firewood	5,422	do.	
Charcoal	18,203	do.	

31. *Timber given free to ryots.*—960 bandy loads of timber and 1,042 bandy loads of firewood have been removed on free passes.

32. *Confiscations.*—These realized the sum of Rupees 1,125 of which 750 has been credited to Government, and 375 to informers. Mr. Sheffield reports that much assistance in detecting smuggling is rendered by the village authorities.

33. *Theft and Mischief.*—Twenty-eight cases—twenty-seven of which were for theft and one for mischief were tried during the year. In twenty-two cases in which forty-seven people were concerned, punishments of fine or imprisonment were awarded, six cases in which eleven people were concerned were dismissed.

34. *Cinchonas.*—The sixteen Cinchonas remaining at the end of last year all died off in the hot season, the climate is far too dry and no care could save the plants through the hot winds experienced in April and May, the experiment will not be tried again.

35. *Plantations.*—The Teak Plantation is a failure I am afraid; tolerably good Teak trees are occasionally found on these hills in ravines or under favorable circumstances, but in an open plantation every individual tree would require so much care and attention that the expense would be too great.

At Nundial Mr. Sheffield has a very good plantation for avenue purposes and it is well stocked with saplings of the following trees :—

Acacia speciosa. Darasan.
Melia Azadirachta. Yapa.
The Tamarind
The Wild Mango.
Thespesia populnea.
Casuarina muricata.
Millingtoma hortensis. The cork tree.
Acacia Arabica. Tuma.

Seeds of many different sorts of jungle trees have also been planted lately, and seeds of many sorts likely to answer are being procured from the Botanical Gardens in Madras and Calcutta.

36. *Health of Establishment.*—Fever of a very bad type is very prevalent in this district, Mr. Sheffield and all his establishment have suffered during the year. Four men have died.

37. *Financial Results.*

	RS.	A.	P.	RS.	A.	P.
Expenditure.						
Establishment	7,174	4	6			
Working charges*	7,335	3	2			
				14,509	7	8
Receipts.						
Seignorage	37,296	6	0			
Sale of depôt timber	541	6	8			
Timber for D. P. W.	2,017	1	4			
Confiscations	750	0	0			
Miscellaneous	441	0	0			
				41,045	14	0
Balance in favor of Government				26,536	6	4

*Of this 2,500 has been expended on a road from Nundial to the foot of the hills.

		Rs.	A.	P.	Rs.	A.	P
Balance of timber in depôt on 31st March 1868	.....	4,307	9	4	26,536	6	4
Add difference in value*	.....	938	14	8			
		5,246	8	0			
Deduct sold during 1868-69	2,493 8 0						
Do. destroyed by white-ants, etc., ...	199 10 .8						
		2,693	2	8			
Balance of timber in depôt on 31st March 1869, viz., 2,042 $\frac{8}{16}$ cubic feet at Rupees 1-4-0 per foot	.....	2,553	5	4			
Decrease in stock	.....	.....			1,754	4	0
Financial results for the year.....	.....	.....			24,782	2	4

38. North Arcot.—*Superintendence.*—These forests have been worked by Overseer Brougham under Mr. Yarde. At the end of the official year, he was promoted to First Class and transferred to the new Cuddapah and Bellary plantations. With the exception of a small depôt, the forests are entirely worked by Voucher and License.

39. *Goodiathum forests transferred by Government but not handed over by the Collector.*—A tract of forests near Goodiathum has always been under the Jungle Conservancy of the Collector of North Arcot, it prevented our establishments of North Arcot, and Salem joining, and considerably affected conservancy as reported by the Forest Officers of Salem and North Arcot. Mr. Wright, the Locomotive Superintendent, also brought to notice that an immense amount of Railway fuel was brought from this tract, these facts were brought to the notice of Government and the Board, and the tract was transferred to our Department—*Vide.* G. O., No. 2,909, of the 20th of November 1868, and an establishment was subsequently sanctioned. The Collector, however, has not handed them over up to date; there is no establishment to supervise operations in this tract, and it has lately come to light that large frauds have been committed and that millions of pounds of fuel have been brought into the Railway depôt at Amboor without any payment for seignorage to Government.

40. *Other tracts under the Collector.*—There are other valuable tracts of forest in this district under the Collector's management, it renders conservancy much more difficult, and if they are to remain so, a proper establishment should be organized, our seignorage rates and rules should be put in force and our Officers should be kept informed of all that goes on. Special reports on this subject and that of jungle conservancy under Collectors in general are now before Government and the Board.

41. *A depot to be formed for Red Sanders roots and stumps.*—The Red Sanders roots and stumps are about to be collected departmentally and a depôt is being formed at Ballapilly.

42. *Timber Depot.*—It was not found necessary to add any timber to the depôt during the year.

* Last year valued at one Rupee in forests, this year at Rupees 1-4-0 in depôt.

43. *Confiscations.*—The sale of confiscated timber during the year realized Rupees 385-10-1.

44. *Theft and Mischief.*—Eighteen cases, almost all for theft of timber, were prosecuted before the Magistrate during the year. In eleven cases in which forty people were concerned punishment was awarded, seven cases in which ten people were concerned were dismissed. Much injury is done to our nurseries and plantations by cattle trespass, and cattle continue to do much damage in the forests.

45. *Free Passes for timber.*—101 bandy loads of timber and 129 bandy loads of bamboos were given on free passes during the year.

46. *Plantations.*—The season has been unusually dry and unfavorable for planting operations.

In the Teeroovalum Casuarina Plantation, 7,110 young plants were put out, from which number about 300 casualties occurred, a few vacancies also occurred in last year's planting; the nursery beds contain about two lacs of plants and some 15,000 are of sufficient size for putting out with the first rain, a small extension to this plantation was made during the year and it was fenced in. Slight damage is committed by a species of Borer. A small plantation has been formed at Ammerdy near Vellore, in this several species of jungle trees and avenue trees are growing well, and experimental sowing of various trees fit for avenue or ornamental purposes is carried on in the nurseries.

Two more blocks of land fit for Casuarina planting have been selected and surveyed and the plans forwarded to the Collector, and the department is in communication with that Officer with respect to a transfer of the same.

47. *Health of Establishment.*—This has been on the whole good, but a Duffadar at Kirkumbady died of jungle fever.

48. *Financial Results.*

	RS.	A.	P.	RS.	A.	P.
Expenditure.						
Establishment	2,733	0	0			
Working charges	2,454	2	9			
Contingencies	0	15	0			
				5,188	1	9
Receipts.						
Seignorage on timber	4,047	13	6			
Do. firewood	2,414	8	6			
Do. bamboos	3,671	15	0			
Do. charcoal	492	11	0			
Do. miscellaneous	105	2	0			
Do. confiscations	385	10	1			
Do. sale of depôt timber	8	0	0			
				11,125	12	1
Balance in favor of Government				5,937	10	4
Balance of timber on hand 31st March 1868	627	3	4			
Deduct sold	8	0	0			
Balance of timber on hand 31st March 1869	619	3	4			
Deduct deficiency in stock				8	0	0
Financial Results for 1869-70				5,929	10	4

49. South Arcot.—*Superintendence.*—These forests have been worked by Overseer Ramiah under Lieutenant Walker. Much attention has been paid to systematic felling and the careful checking of licenses, etc.

50. *Departmental Working.*—The Departmental working which was introduced last year into the Trinomallay Talook is not popular, and the demands on

our depôt are small, this, however, was to be expected at first. A timber shed has been erected at Chengam, and a wood yard has been fenced in.

51. *Depot.*—1365 cubic feet of timber were felled and stored in depôt during the year, 1,332 cubic feet were sold to merchants, realizing Rupees 759-9-0, 124 cubic feet remain in stock.

52. *Timber removed on License.*—139 Bandy loads of timber, 1,096 of firewood, 1,275 of bamboos, 196 of bark and 73 of charcoal, 961 head loads of timber, 5,127 of bamboos, and 1,571 of charcoal have been leased out for one year as an experiment.

53. *Free passes.*—632 bandy loads of timber and 190 of bamboos and 65 of firewood were granted on free passes to ryots.

54. *Confiscation.*—The confiscations sold for the sum of Rupees 173-6-4, of this Rupees 142-2-2 were credited to the depôt, and Rupees 31-4-2 to informers.

55. *Theft and Mischief and breaches of Forest Rules.*—Seventeen cases in which Seventy-two persons were concerned were brought before the Magistrates, sixty-three persons were punished and nine acquitted, the punishments, as a rule, were too light.

Forty-three cases were settled departmentally in forty-one timber, etc., was confiscated and in two it was released.

56. *Firewood Jungles and proposed Plantations.*—The firewood jungles of this district have been carefully explored by the Officer in charge, and his report forms appendix.

Plantations for Railway fuel will be necessary; there are admirable sites both for planting Casuarinas and for general planting; the subject is under consideration and will be specially reported on, if the plantations are placed under the Special Department; the firewood jungles should also be transferred to it.

57. *Health of Establishment.*—This has been good upon the whole.

58. *Financial Results.*

	RS. A. P.	RS. A. P.
Expenditure.		
Establishment	2,469 2 0	
Working charges	720 9 5	
		3,189 11 5
Receipts.		
Sale of timber from depôt	757 9 0	
Seignorage on timber, bamboos, &c. .	2,059 2 0	-
Confiscations	142 2 2	
Miscellaneous	262 8 0	
		3,221 5 2
Balance in favor of Government ..		31 9 9
Balance of timber in depôt on 31st March 1868 .. 44 0 0		
Add felled during the year 1,023 13 8		
	1,067 13 8	
Deduct timber sold during the year 757 7 9		
Deduct loss and difference of rates 216 10 9		
	974 2 6	
Value on hand on 31st March 1869 ...	93 11 2	
Add additional stock of timber ...	.....	49 11 2
Financial results for 1868-69, profits.	.....	81 4 11

59. *Madura.*—Mr. Turnbull was removed to the Wynaad Range in May last, and Lieutenant Fullerton assumed charge of this range and Tinnevelly in June, he had a great deal of travelling over his districts and contracted jungle fever which was followed by incessant diarrhœa, from which he died in March; he is a great loss to the Department. Lieutenant Walker was then nominated to the united ranges but he had not joined at the close of the official year. Overseer Appavoo has remained in charge since Lieutenant Fullerton's death and he has submitted the Annual report.

60. *An Overseer appointed.*—Overseer Appavoo was appointed as a 3rd Class Overseer for this range under the Deputy Conservator, and joined on the 23rd of September 1868, he has been a long time in the department as Head Writer to the Conservator, and in the Central Office and has considerable experience.

61. *Depôts.*—During the year 1,255 cubic feet of Vengay were felled and brought to the Cumbum depôt. Rupees 7,050 were realized by the sale of timber. A depôt is about to be formed at Periakolum.

62. *Licenses.*—During the year Rupees 3,327-15-0 were realized by the sale of Licenses.

63. *Plantations.*—A small Teak plantation has been commenced near Cumbum.

64. *Theft and Mischief.*—Only 5 cases in which eleven people were concerned, were prosecuted during the year, one was dismissed and in the other four punishments of fine and imprisonment were awarded.

65. *Financial Results.*

Expenditure.	RS.	A.	P.	RS.	A.	P.
Establishment	4,845	9	0			
Working charges	1,212	4	7			
Contingencies	75	11	5			
				6,133	9	0
Receipts.						
Sale of timber from depôt	7,050	0	0			
Seignorage	3,327	15	0			
Confiscations	144	12	0			
				10,522	11	0
Balance in favor of Government	.....			4,389	2	0
Value of timber on hand on 31st March 1868	7,367	1	6			
Add felled during 1868-69	3,203	11	11			
	10,570	13	5			
Deduct sold during the year	8,682	11	5			
Balance on hand on 31st March 1869	1,888	2	0			
Deduct deficiency in stock	.....			5,478	15	6
Financial results. Deficiency	.....			1,089	13	6

66. TINNEVELLY.—*Superintendence.*—Lieutenant Fullerton joined the range in June, and the forests of South Tinnevelly from Courtallum down to Tricknagoody were handed over to the Department. At Lieutenant Fullerton's death in March,

Lieutenant Walker was appointed to the Range, he had not joined at the close of the Official year and the forests remained under the Collector, hence the absence of an Annual report.

67. *Establishment.*—Mr. Newman, a second class Overseer was appointed to this Range under the Deputy Conservator, and joined on the 21st of September 1868, he has had a good training in planting operations on the Neilgherries.

On the 16th March 1869 the whole establishment was remodelled (*vide* G. O. No. 699 of that date) and now stands as follows :—

		RS.
	1 2nd Class Conservator	700
	1 2nd Class Overseer	80
	Travelling allowance of do	30
68.	*Paupanassum and Alwarcoorchy.*	
	1 Maistry	15
	12 Peons at 6 Rupees each	72
69.	*Calcad.*	
	1 Maistry	15
	5 Peons at 6 Rupees each	30
70.	*Wartrap and Vasadevanulur.*	
	3 Maistries at Rupees 15 each	45
	12 Peons at 6 Rupees each	72
		1,059

71. *Conservancy.*—Conservancy is quite in its infancy in this Range, Lieutenant Fullerton had made a careful tour through the whole Range in a great part of which he was accompained by the Conservator and schemes were in hand for more systematic conservancy and the formation of depôts, this work will now devolve upon Lieutenant Walker who is well qualified for it, from his experience in Salem.

72. *Theft and Mischief.*—8 cases in which 42 persons were concerned were tried before the Magistrates, in 5 cases in which 25 persons were concerned, the parties were punished with fine and imprisonment; in the other 3 cases in which 17 people were concerned, confiscation only was ordered. The punishments were ample.

73. *Financial Results.*	RS.	A.	P.	RS.	A.	P.
Expenditure.						
Establishment	6,936	10	8			
Contingencies	64	3	8			
				7,000	14	4
Receipts.						
Seignorage on timber	13,453	4	6			
Confiscation	243	8	2			
Miscellaneous	11	1	3			
				13,707	13	11
Balance in favor of Government				6,706	15	7

74. ANAMALLAYS.—*Superintendence.*—These forests have remained under Captain Gosling during the year.

75. *New ghaut road.*—A very good ghaut road from the foot of the timber slip to the entrance of the Teak Forests was constructed during the year at the small cost of Rupees 4,009 Greatcredit is due to Captain Gosling from the small cost at which

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it has been constructed; the gradient is an average of 1 in 18, and nowhere more than 1 in 12.

76. *Forest Roads.*—A new road through the forests above ghaut from Puliaddy to the head of the timber slip was completed during the year, it is a saving of nearly 3½ miles over the old road.

77. *Road below ghaut.*—The road from the timber slip toward Mungarah, and Palghaut was repaired by the Department as far as Chumnampaddy at a cost of Rupees 570-2-0.

78. *Operations.*—On account of the large stock of timber still in the forest depôts, no felling took place during the year.

79. *Carting.*—The Government Cart Establishment conveyed 587 logs, and dockyard planks containing 8,805, cubic feet from the depôts in the forest to the head of the ghaut, 885 pieces (side slabs, small logs and refuse planks) containing 12,825 cubic feet from the foot of the ghaut to Annamallay village, 82 logs and planks containing 1,312 cubic feet from foot of ghaut to the Mungarah floating station, and 24 Rosewood logs containing 480 cubic feet and 8 Vengay logs containing 128 cubic feet from Sholay Kurray to the Railway station at *Walyar*.

80. The cart contractors carted 509 planks and logs containing 7,635 cubic feet from the foot of the ghaut to Mungarah at a cost of Rupees 2,414.

1,210 planks were floated from Mungarah to Ponany on the western coast.

81. *Slipping.*—600 logs and planks were slipped by the Government elephants.

82. *Forest fires.*—No loss occurred to any of the timber from the annual fires.

83. *Seignorage.*—The seigniorage collections amounted to Rupees 2,679-11-3.

84. *Sales.*—Auction sales of inferior timber realized Rupees 3,087-6-2 from depôt.

Sales from the forest depôts realized Rupees 19,567-2-6.

Timber to the value of Rupees 44,731-6-1 was supplied to Public Departments during the year, but the accounts, etc., were not settled at the close of the official year.

85. *Ponachy Forests.*—The felled timber in these forests was not found to amount to more than 10,000 cubic feet, so Government only allowed Mr. Lowry a compensation of 3,000 Rupees in lieu of 5,000; unless a road is made up the ghaut it will be both difficult and expensive to remove this timber.

86. *Health of establishment.*—Jungle fever was prevalent as usual, and several of the subordinates of the establishment were carried off.

87. *Demands for timber exceed supplies in depot.*—The demand of the Bombay Marine and Gun Carriage, and the Madras Department Public Works and Gun Carriage Departments exceed the stock of timber now in depôt, and felling will have to take place during the ensuing season.

88. *Loss by tigers.*—Several casualties have occurred amongst the cattle of the establishment from tigers.

89. *Financial results.*

Expenditure.	RS.	A.	P.	RS.	A.	P.
Establishment.....	10,997	0	4			
Contingencies.....	135	13	6			
Working charges	19,911	12	11			
				31,044	10	9

Receipts.	RS.	A.	P.	RS.	A.	P.
Timber sold from depots	24,722	1	6			
Seignorage	2,679	11	3			
Auction sales	3,087	6	2			
				30,489	2	11
Balance against Government.				555	7	10
Timber in depôt on 31st March 1868	2,16,546	12	0			
Deduct timber sold in 1868-69	24,722	1	6			
Balance in hand 31st March 1869	1,91,824	10	6*			
Deficiency in stock	... .			24,722	1	6
Financial results	. .....			25,277	9	4

90. BOLUMPATTY, SHOLAY KURRAY AND CHENAT NAIR.—*Superintendence.*—These forests were worked during the year by Overseers Mootoosawmy and Lloyd, under Captain Gosling.

91. BOLUMPATTY.—*Tract of forest in dispute.*—The claim of one Andu Sait, a Coimbatore merchant to a tract of forest on the Bolumpatty hills has not yet been settled, though repeated references have been made to the Collector and the Conservator, twice visited the tract, a much larger portion than was before supposed is now claimed, and felling operations cannot be carried on in a large area until the boundaries are settled.

92. *Seignorage.*—A revenue of Rupees 3,206-5-3 was realized by the sale of Licenses against Rupees 1,310-1-9 the cost of establishment.

93. CHENAT NAIR.—*Operations.*—In these forests 52 large rose wood logs and 32 jungle wood logs were felled for the Bombay Marine.

94. SHOLAY KURRAY.—*Operations.*—*Slipping* 73 logs of rose-wood and 9 of jungle wood felled last year were slipped by Elephants.

95. *Carting.*—81 logs of rose-wood, 39 of Vengay, 9 of jungle wood, 91½ pairs of spokes and felloes, 2,685 cubic yards of fuel were carted by Contractors from the foot of the ghauts to the Railway station of Walyar.

96. *Felling.*—4 rose wood logs, 3 Vengay and 9 jungle wood were felled, and 91½ pairs of spokes and fellows were prepared from old teak stumps.

97. *Fuel Reserve.*—This has been trenched and fenced in on the eastern and western sides at a cost of Rupees 950-12-2. The northern side is shut in by the hills, and the southern by the Railway, the conservancy of the existing timber has received attention, and a nursery has been formed for extending planting operations.

98. *Financial results.*

Expenditure.	RS.	A.	P.	RS.	A.	P.
Establishment	2,850	1	9			
Contingencies	140	1	7			
Working charges.....	5,175	15	2			
				8,166	2	6

* N. B.—Of this Rupees 44,731-6-1 the value of Timber supplied to Government Departments will be accounted for in the accounts for 1869-70.

Receipts.	RS.	A.	P.	RS.	A.	P.
Timber sold from depôt.....	1,286	0	0			
Seignorage...	3,191	5	3			
				4,477	5	3
Balance against Government.	.....			3,688	13	3
Timber in depot on 31st March 1868..... ...	6,791	12	0			
Add Timber felled during 1868-69	8,166	2	6			
	14,957	14	6			
Deduct sold in 1868-69.....	1,286	0	0			
Timber on hand 31st March 1869.....	13,671	14	6*			
Deduct deficiency in Stock ...	. .....			6,880	2	6
Financial results	... .			3,191	5	3

99. MUDUMALLAY.—*Superintendence.*—These forests have remained under Colonel Morgan during the year, and been worked by Overseer Iyasawmy Naick.

100. OPERATIONS.—*Felling.*—23,460 cubic feet of Teak, Vengay and jungle wood was felled and stored during the year at a cost of 2,313-8-10; the felling was very limited as there is still a large stock of timber on hand.

101. *Dragging.*—The elephants have dragged 45,587 cubic feet of timber from the forests to the road.

102. *Carting.*—The cart establishment has carted 38,742 cublic feet of timber from the forest depôts to Tippacadu, Seegoor and other depôts on the high roads, the value of the work performed is estimated at Rupees 9,946, against the cost of the establishment which was Rupees 6,794.

103. *Teak Plantations.*—The growth of the trees in the plantation at Mudumallay is fair.

A second small teak plantation is about to be formed at Bennie further west in the forest and more under the influence of the south west monsoon.

104. *Sales.*—Timber to the value of Rupees 3,545-11-5 has been sold to the public.

Rupees 538-0-4 has been realized by seignorage, etc.,

24,555 cubic feet of Teak have been supplied to the Public Works on the Neilgherries and 4,935 cubic feet to the Public Works in Wynaad, making a total of 29,490 cubic feet valued at Rupees 56,758-2-4.

105. *Want of a Labor Contract Law.*—Colonel Morgan much complains of this want of his report, all his cart contractors desert him during the coffee carting season, with a Contract Law he is in favor of the advance system.

106. *Health of Establishment.*—Fever has been prevalent as usual, besides Dysentery and Measles.

107. *Theft and Mischief.*—There were no prosecutions.

108. *Financial Results.*

Expenditure.	RS.	A.	P.	RS.	A.	P.
Establishment...	17,306	8	9			
Contingencies..... ...	160	6	0			
Working charges	32,327	11	10			
				49794,	10	7

* N. B.—Of this Rupees 8,798-14-1 the value of Timber supplied to Government departments will be accounted for in the accounts for 1869-70.

Receipts.	Rs.	A.	P.	Rs.	A.	P.
Sale of timber to public.....	3,536	11	5			
Seignorage.....	547	0	4			
Value of timber supplied to Public Works Department.	55,930	11	8			
				60,014	7	5
Balance in favor of Government	.....			10,219	12	10
Balance of timber on hand 31st March 1868	1,86,825	7	0			
Add felled in 1868-69	47,878	7	5			
	2,34,703	14	5			
Deduct sold.....	60,226	7	1			
Balance on land 31st March 1869	1,74,477	7	4			
Deduct deficiency in timber..	.....			12,347	15	8
Financial results. Deficiency.	.....			2,128	2	10

109. *Seegur and Sultiamungalum.*—These forests have been carefully worked and conserved during the year by Overseer Appavu Mudally under Colonel Morgan.

110. *Operations.*—4,278 maunds of sandal wood have been felled and stored, valued at Rupees 10,427-1-0.

111. *Theft and Mischief.*—There were no prosecutions.

112. *Seignorage.*—Sales of Licences have realized a sum of Rupees 1,759-3-0.

113. Sales.—*Timber to Department Public Works.*—Rupees 4,000 worth of timber has been supplied to the Department Public Works.

Sandal to the value of Rupees 16,500 and Teak to the value of Rupees 1,100 have been sold to merchants.

114. *Sandal-wood plantation.*—The year has been dry and unfavorable to planting operations. 3,650 young trees have been put out during the year, the expenses of the plantation have been Rupees 580-15-4, including new Nurseries.

115. *Health of Establishment.*—This has been pretty good.

116. *Financial Results.*

Expenditure.	Rs.	A.	P.	Rs.	A.	P.
Establishment.....	1,806	0	0			
Working charges.....	5,605	6	0			
Contingencies.....	19	14	0			
				7,431	4	0
Receipts.						
Sale of Sandal wood, etc.	17,600	0	0			
Seignorage	1,757	0	7			
Timber supplied to D. P. W....	4,000	0	0			
Miscellaneous.....	2	2	5			
				23,359	3	0
Balance in favor of Government.	.....			15,927	15	0
Balance of timber in stock 31st March 1868	31,068	13	6			
Add felled during the year ...	10,427	1	0			
	41,495	14	6			
Deduct sold during the year ...	22,093	3	3			
Balance of timber in stock 31st March 1869...	19,402	11	3			
Deficiency in stock.....	.....			11,666	2	3
Financial results for 1868-69.....	.....			4,261	12	9

117. BHOWANI.—*Superintendence.*—The work during the year has been carried on by Overseer Grant under Colonel Morgan.

118. *Operations.*—The usual conservancy of the jungles has been attended to.

3,545½ maunds of Sandal-wood valued at Rupees 12,171-8-2, have been felled and stored in depôt.

119. *Seignorage.*—The sales of Licenses realized Rupees 3,856-1-10.

120. *Sales.*—Sales of Sandal-wood realized Rupees 12,000.

121. *Plantations.*—Colonel Morgan could not find any favorable site for a fuel plantation near Cauverypooram, but he has now selected a small piece of ground near Bhowani, and if it can be obtained, a plantation will be commenced.

A site for a small Sandal-wood plantation has been selected on the Burghoor hills and operations will commence at once.

122. *Theft and Mischief.*—There was one prosecution only which was for theft and the two persons concerned were sentenced to ten days' simple imprisonment.

123. *Health of Establishment.*—All the establishment have suffered more or less from fever.

124. *Financial Results.*

Expenditure.	RS.	A.	P.	RS.	A.	P.
Establishment.....	2,400	0	0			
Working charges...	3,610	1	2			
Contingencies...	35	7	7			
				6,045	8	9
Receipts.						
Sale of Sandal wood.....	12,000	0	0			
Seigniorage.....	3,856	1	10			
				15,856	1	10
Balance in favor of Government.	.....			9,810	9	1
Balance of timber on hand 31st March 1868.....	1,354	10	6			
Add felled during the year... ...	12,171	8	2			
	13,526	2	8			
Deduct sold.....	12,000	0	0			
Balance of timber on hand 31st March 1869...	1,526	2	8			
Add surplus stock	.....			171	8	2
Financial results for 1868-69 ...	.....			9,982	1	3

125. COLLEGAL.—*Superintendence.*—These forests have been worked by Mr. Spring his health is not such as to allow of his travelling as he ought to, towards the close of the year he got a sun stroke and he has proceeded on sick leave for three months, he takes his pension in November.

126. *Operations.*—3,833 Maunds of Sandal-wood valued at Rs. 13,566-11-6 have been felled and stored in depôt.

127. *Theft and Mischief.*—There were no prosecutions.

128. *Plantations.*—A small Sandal-wood plantation has been commenced.

129. *Seignorage.*—Rupees 1,166-5-9, was realized by the sale of Licenses.

130. *Sales.*—Sandal-wood to the value of Rupees 14,026-4-0 was sold to merchants.

131. *Financial results.*

Expenditure.	Rs.	A.	P.	Rs.	A.	P.
Establishment	2,400	0	0			
Working charges	4,406	7	3			
Contingencies	0	0	0			
				6,806	7	3
Receipts.						
Sale of Sandal wood	14,026	4	0			
Seignorage	1,166	5	9			
Miscellaneous	146	0	0			
				15,338	9	9
Balance in favor of Government.				8,532	2	6
Balance of timber in stock 31st March 1868	2,610	15	0			
Add felled during the year	13,566	11	6			
	16,177	10	6			
Deduct sold	14,026	4	0			
Balance on hand 31st March 1869.	2151	6	6			
Deduct deficiency in stock				459	8	6
Financial results for 1868-69				8,072	10	0

132. *Neilgherry Sholas.*—The Sholas remained under Colonel Morgan during the year and operations were conducted by Overseers Newman and Taylor; at the end of the Official year, they were all handed over together with the establishments and the different plantations entirely to the Commissioner.

133. *Boundaries.*—The Boundaries of the Government Sholas are still under demarcation, the work progresses slowly.

134. *Devi Shola.*—Government gave up all claim to the felled wood in this Shola; after the expiration of the two years, the owner had not fulfilled his part of the agreement.

135. *Clandestine felling.*—Much wood has been confiscated as clandestinely felled but such trifling punishments have always been awarded that there has been little chance of checking smuggling.

136. *Operations.*—The operations have consisted of conserving the Government Sholas, forming Nurseries, extending planting operations in different Sholas and supplying the Department Public Works with fuel.

Seignorage.—The amount realized by sale of Licences has been Rupees 2,681-11-0.

1,633 Bandy loads of fuel to the value of Rupees 999-4-0, were supplied to the Lawrence Asylum Works and Wellington Work-shop.

Plantations.—In the Eucalyptus plantation at Ootacamund 1,814 young trees of Eucalyptus have been planted out and 780 Pinus Pinaster var, Maritima and a large quantity of Eucalyptus globulus have been mossed, and 7,500 are now ready for planting out. Rats have committed much damage lately in the Nursery and some trees in the plantation have been killed by injury to the roots from these animals. Measures should be taken to exterminate them.

137. *Rapid growth and value of the Blue Gum.*—The great value of the timber of Blue Gum or Eucalyptus globulus is not generally known, in Australia it is the best building timber known (though most of the numerous species of Eucalyptus yield valuable timbers) and is said to be fully equal to the best Indian Teak; its rapidity of growth on these hills exceeds that of any tree indigenous or introduced, and has been the admiration of all Forest Officers who have visited our plantations. Its cultivation should be largely extended on all our hill ranges; it grows, well on grass land but its growth is not nearly so rapid as in Shola land, the planting is more expensive and precarious, and it is much affected by wind. All sholas thinned out or deforested for firewood should be renewed with this tree, it exhibits the most favorable growth when planted inside sholas of the indigenous trees (particularly in the ravines) as it soon overtops all the native trees and it has complete shelter from the wind when young; one tree in such a locality in the grounds of Gaytonpark at Ootacamund may be mentioned as quite a sight, it is upwards of 12 feet in girth and of enormous stature. If the Railway is to be extended to Cullar, the ravines up the Coimbatore slopes of the hills might be largely planted with this tree at elevations above 3,500 feet. In Australia this tree has been measured upwards of 400 feet in height and 40 feet in girth.

138. *Introduction of new trees.*—The colossal Eucalyptus fissilens (or Missmate) the Eucalyptus Stuartiana and Eucalyptus sideroxylon and several other species have been introduced during the year and are growing well. Application has been made to Australia for the three different species of Járá (Eucalyptus Mahagoni, rostrata and marginata) which yield such valuable sleeper timber and are said to be impervious to the attack of the sea-worm, they have not yet been received, there are a few young plants of the Eucalyptus Mahagoni at Ootacamund but the other species have not yet been introduced.

The following trees were received during the year from Kew in large Wardian Cases, they arrived in first rate condition and are growing very well in the Nurseries on the Neilgherries.

100.	Quercus pedunculata	British Oak
100.	,, cerris	Turkey Oak.
100.	Custanea vesca	Sweet chesnut.
100.	Æsculus hippocrastanum	Horse chesnut.
100.	Fraxinus excelsior	The Ash.
25.	Ornus Europeus	The flowering Ash.
75.	Carpinus betulus	The Hornbeam.

A subsequent case contining several hundred of the two species of Oaks was forwarded to the Pulney Hills.

A large quantity of the seeds of all the above besides seeds of the Sycamore (Acer pseudo-platanus) the Norway Maple (Acer platanoides,) the Alder (Alnus glutinosa) the Lime (Tilia Europea) the Birch (Betula alba) and the Beech, (Fagus Sylvatica) were also received in a dry box, but they had all lost their germinating powers from having got damp. Seeds of some of the above placed in the soil in the Wardian cases in between the plants all arrived in good condition and are now growing well in the nurseries.

The Quercus cerris or Turkey Oak has never been introduced before; the common Oak grows here and becomes a small tree, but is very poor compared to what it is in Europe.

The sweet chesnut will probably answer but it is not expected that the growth of most of these deciduous tree will be favorable on these hills as they require the winter.

The Walnut grows so well on these hills and fruits so abundantly that its cultivation on a larger scale is very desirable, if only for its valuable timber.

Seed of the following Coniferæ were received during the year from Kew and are growing very well. Half in our nurseries and half in the Government Gardens.

Pinus Benthamiana.
" Pallasiana.
" Laricio aduncа.
" Laricio corsica.
" Laricio altissima.
" Laricio caramanica.
" Laricio.
" Pyrenaica.
" Muricata.
" Insignis.
" Bungeana.
" Austriaca.
" Sylvestris horizontalis.
" Sylvestris Germanica.
" Sylvestris.
" Pinaster Semoniana.
" " Maritima.
" " Religiosa.
" Inops.
" Excelsa.
" Pinea.
" Taurica.
" Panderosa.
" Tuberculata.
" Seratina.
Picea Pinsaps.
" Webbiana.
" Cephalonica.
" Nordmaniana.
Abies Dowglasü.
" Alba.
Larix Europea.

Many of these trees will grow well here, and their introduction is of great value. Amongst coniferæ no tree grows here more rapidly or finer than the Himalayan Cupressus torulosa and its extended cultivation should be attended to, it is highly ornamental and the timber is valuable.

The Pinus Pinaster var: Maritima was largely introduced last year and is growing very well, it will be a valuable introduction as its growth is rapid and good as proved by several trees of ten or twelve years standing in the Botanical gardens.

Dr. Brandis forwarded large packets of seed of the following Himalayan trees; but as they arrived at the close of the official year, they were handed over to the Commissioner. A few of the seed were however sent to the Botanical gardens, and some to the Pulney hills.

The Cashmere Cherry.
Quercus incana ..... Himalayan Oak.
Fraxinus floribunda ..... " Ash.
Cedrus deodara..... The Deodar.

Picea Webbiana.
Cupressus torulosa.
Juniperus excelsa.
Pyrus kumaonensis.
Taxus baccata.
Abies Smithiana.
Pinus Geradiana.
,, Excelsa.

Seeds of the following fast growing Australian trees not previously introduced were received from Australia at the close of the year, and were consequently handed over to the Commissioner; most of them are trees with spreading tops, a great desideratum.

Acacia pycnantha (a tree of great beauty.)
,, implexa.
Callitris cupressiformis.
Callitris Gunnii.
Casuarina paludosa.
Exocarpus cupressiformis.
Myoporum insulare
Tristania longifolia.

The Officiating Conservator has been in correspondence with all the forest Officers in India and Burmah for the exchange of tree seed, etc., also with Kew, the Mauritius, Australia and Ceylon. Seed have been forwarded from our different forests to Kew, Ceylon, the Mauritius, Australia and different part of India.

139. *Advantages and disadvantages of the two common Australian acacias.*—The Acacia dealbata (Link) or Australian wattle (often but erroneously called Acacia mollissima on the Neilgherries) and the Acacia melanoxylon or Australian Blackwood are unrivalled on our hill ranges for firewood plantations or as screen from the wind, and the former grows wonderfully as Coppice, and the latter has very valuable timber, the former however is a perfect nuisance in small grounds or gardens and bids fair to overrun some parts of the station of Ootacamund as can be easily seen in the Bishopsdown grounds and many other places, its roots spread most rapidly in every direction and suckers come up by the thousands to the exclusion of all other vegetation, the roots of the latter tree also spread considerably and are a great nuisance near roads, nothing will grow near either tree without constant digging and removal of roots. If Ootacamund was deserted, the whole basin would probably at no lengthened period become a forest of these trees to the exclusion of almost all other vegetation.

140. *Theft, Mischief, etc.*—30 cases in which 170 people were charged with stealing wood were brought before the authorities, only one case was dismissed, and punishment awarded in all the others, but this was generally only six hours imprisonment.

141. *Financial Results.*

	RS.	A.	P.	RS.	A.	P.
Expenditure.						
Establishment.....	3,356	3	10			
Working charges.....	1,877	15	2			
Contingencies..... ...	46	0	0			
				5,280	3	0
Receipts.						
Seignorage.....	2,681	11	0			
Timber supplied to Department Public Works.....	999	4	0			
				3,680	15	0
Balance against Government.....	.....			1,599	4	0

142. *Wellington Australian plantation.*—The planting operations have been most carefully and successfully carried on by Overseer Newman.

143. *Operations.*—7000 young trees of acacia melanoxylon and 11,200 of Acacia dealbata have been planted out during the year.

144. *Theft Mischief, etc.*—No prosecutions during the year.

145. *Financial Results.*

	RS.	A.	P.	RS.	A.	P.
Expendiiure.						
Working charges	1,518	4	0	1,518	4	0
Receipts.						
Sale of fire wood from plantations	107	9	6	107	9	6
Balance against Government				1,410	10	6

146. SALEM.—*Superintendence.*—This district remained under the charge of Lieutenant Walker during the official year.

147. SALEM TALOOK.—*Superintendence.*—Fourth Class Overseer, Rungiah Naidoo, has had charge of the operations in this talook under Lieutenant Walker.

148. *Operations.*—The Voucher and Licence system is being gradually given up to a great extent in favor of departmental working.

774 Sandalwood besides other trees have been cleared of creepers on the Kollay Mallays.

The firewood reserve A. near the Shevaroy Hill Railway station has been extended so as to include the slopes of some spurs of the adjoining hills.

Nurseries have been formed in all the fuel reserves.

Several tracts of forests have been marked out for Locomotive fuel requirements.

The settlement of the boundaries on the Kolroys has been delayed pending the result of the suit instituted by the Pollygar's Contractor.

149. *Depots.*—208 maunds 10½lbs. of Sandal-wood has been felled and stored in the depôt.

150. *Firewood and charcoal.*—These are now leased out on contract from tracts marked off by the Department, the Contractors are bound down to grant passes at the Government rates of seignorage.

151. *Theft, Mischief, Trespass, &c.*—20 cases in which 53 persons were concerned were brought before the Magistrates during the year, 45 persons were convicted and 8 acquitted: the punishments were too light.

2 cases in which the timber, &c., was confiscated were settled departmentally.

Lieutenant Walker reports that as a rule he refrains from prosecuting in this range, as the right of the Department to enforce its rules by Law is often questioned.

152. *Forest Chart.*—A chart of the Kollay Mallayas is under preparation.

153. *Sales.*—208 maunds 10¼ lbs. of Sandal wood billets and roots were sold from the depôt.

154. *Railway fuel.*—The Locomotive Department has been supplied with 5,533 tons of fuel at a seignorage of Rupees 6,028-5-9.

155. *Plantations.*—In plantation No. I (Malliapooram) Babul (Acacia Arabica) seed was sown broad-cast and the seed came up well and stands a fair chance of success if the season turns out at all favorable, these plantations have suffered from the failure of the north-east monsoon, and the long subsequent drought.

In plantation No. II. (Shevaroys) 28,700 pits were dug and 28¾ acres of fresh jungle cleared, 14,000 trees chiefly Toon (Cedrela Toona) were put out. Teak Eucalypti, Belgam Walnut, Alenrites triloba, Jack, Nim and Acacia lencophlea have also been introduced into the nurseries on a small scale. The Toon plants one year old are ten feet high, the growth of the Pinus Pinaster is slower here at an elevation of about 4,500 feet, than on the Neilgherries at 7,000 feet; but the plants are healthy.

156.—*Financial results.*

Expenditure.	RS.	A.	P.	RS.	A.	P.
Establishment	9,236	11	7			
Working charges.....	3,682	6	8			
				12,919	2	3
Receipts.						
Sale of timber from depôt ...	770	4	11			
Seignorage sales, etc.	34,631	14	1			
Confiscations	534	9	2			
Miscellaneous	35	2	5			
				35,971	14	7
Balance in favor of Forests...	.....			23,052	12	4
Deduct decrease in stock ...	.....			138	1	0
Financial result for 1868-69	.....			22,914	11	4

157. *Tripatore Talook.*—The forests of this range worked by Mr. Franklin under Lieutenant Walker.

158. *Demarcation.*—The Deputy Conservetor visited the Yellagiri and Javadi Hills with the Head Assistant Collector, and preliminary measures were taken for reserve and demarcation.

159. *Depots.*—524 maunds and 12 lbs. of Sandal-wood and 1,374 cubic feet of timber were felled and stored in depôt, and 1,309 cubic feet of timber is under transport from forests to depôt.

201 maunds and 16 lbs. of Sandal-wood and 2,466 cubic feet of timber remain in depôt.

160. *Conservancy, &c.*—392 Sandall-wood trees and 90 other trees were cleared of creepers during the year.

161. *Theft and Mischief.*—31 cases in which 114 persons were concerned were brought before the Magistrates; 85 persons were convicted and 29 acquitted: the punishments were too light. 44 cases were settled departmentally.

162. *Fire-wood and Charcoal.*—These are now let out on contract as in the Salem Talook.

163. *Railway fuel.*—The Locomotive Department were supplied with 4,389. tons of wood fuel at a seigniorage of Rupees 5,105-13-2.

164. *Sales.*—483 maunds and 14 lbs. of Sandal-wood were sold to merchants and 1,939 cubic feet of timber.

165. *Fuel Reserves.*—The two reserves D. and E. commenced last year were fenced in and Nurseries have been formed.

166. *Health of Establishment.*—Fever has been very prevalent.

167. *Financial Results.*

	RS.	A.	P.	RS.	A.	P.
Expenditure.						
Establishment	4,697	1	4			
Working charges	1,433	9	6			
				6,130	10	10
Receipts.						
Sale of depôt timber	2,923	13	3			
Seignorage, &c.,	11,856	7	10			
Confiscations	220	9	5			
Miscellaneous	48	10	7			
				15,049	9	1
Balance in favour of Government				8,918	14	3
Add increase in stock of timber				783	8	7
Financial results for 1868-69				9,702	6	10

168. *Denkinacottah Forests.*—These forests were worked by Overseer, Mahomed Ali under Lieutenant Walker

169. *Roads.*—The Denkinacottah and Auchitty road which was opened out last year as far as Cundacottah by the Department Public Works from forest funds has not been proceeded with for want of money, it will be completed by the Forest Department as far as Sevenhully.

No. II. Road from Pennagara was opened out for some distance and will be completed shortly under the arrangement sanctioned in G. O., No, 778, dated 20th March 1869.

No. III. Road from Pennagara has been completed as far as the Chenar river.

170. *Depots.*—4,190 cubic feet of timber was felled and stored in depôts at Denkinacottah and Pennagara. 1,287 maunds 17½lbs. of Sandal-wood felled and stored.

750 maunds 23lbs. of Sandal-wood and 3,544 cubic feet of timber remain in depôt.

171. *Conservancy, etc.*—1,356 Sandal-wood trees were cleared of creepers.

172. *Theft and Mischief.*—39 cases in which 161 persons were concerned were brought before the Magistrates, 121 persons were convicted and 40 acquitted. Five cases were settled departmentally.

173. *Sales.*—1,717 maunds of Sandal-wood were sold to merchants.

4,438 cubic feet of timber and a large amount of bamboos.

174. *Timber supplied to Government Departments.*—The Remount depôt at Oosoor and the Department Public Works have been supplied with timber from our depôts.

175. *Health of Establishment.*—Fever has been very severe.

176. *Financial Results.*

	RS.	A.	P.	RS.	A.	P.
Expenditure.						
Establishment	5,085	0	11			
Working charges	4,285	4	11			
				9,370	5	10
Receipts.						
Sale of timber from depôts	12,234	9	4			
Timber supplied to Government Departments	435	13	11			
Seignorage, etc.,	3,076	7	5			
Confiscations	49	13	0			
Miscellaneous	2	4	0			
				15,798	15	8
Balance in favour of Government				6,428	9	10
Deduct deficiency in stock				2,176	5	1
Financial results for 1868-69				4,252	4	9

177. *Forest products.*—Lieutenant Walker's remarks on Forests products are deserving of careful attention, the Revenue Board are at present much opposed to any departmental collections or to any revenue being derived from these articles except in strictly reserved tracts, a very large and perfectly legitimate revenue however, is to be derived from the fruit of trees (tamarinds, etc.,). gall nuts, dyes, etc., and in some districts it is estimated that such would more than cover all the cost of our establishments, it is a mistake too, to suppose that it would be against the interests of the hill men, they would still collect as hitherto; but the Forest Department would give a better price than the chetties and petty merchants in whose hands they now are, and by whom they are often much cheated.

178. *Revenue and Expenditure of the district.*—The Revenue of the whole Salem District amounts to Rupees 66,820-7-4 against an expenditure of Rupees 28,420-2-11 and the timber in store is estimated at Rupees 7,804-10-1 which shows a decrease of Rupees 1,481-2-4 over that at the end of last year. Much of the expenditure is extraordinary, *viz.*, Roads, Rupees 2,945-7-11. Formation of timber yards, Rupees 435-12-6; formation of Railway fuel reserves, Rupees 2,825-12-5.

179. *Seignorage.*—In the whole Range the following is a List of what has been removed during the year on payment of seignorage:—

	Bandy loads.		Head loads.
Timber 1st Class	368		
2nd ,, ...	164		
3rd ,, ...	252		
	—— 784	.....	4,301
Firewood	13,212		
Bamboos	5,417	.....	73,214
Bark	924	.....	81
Charcoal	4,802	.....	562

180. *Free passes.*—The following is a List of what has been granted on free passes during the year:—

136	Bandy loads	of	timber.
3	,,	,,	Small bamboos.
30	,,	,,	Firewood.
727	Head loads	,,	Frames.
2,042	,,	,,	Joists.
7,384	,,	,,	Props.
10,273	,,	,,	Pen Props.
7,328	,,	,,	Poles and Pegs.
4,520	,,	,,	Plough shares.
635	,,	,,	Handles.
926	,,	,,	Yokes.
50,710	,,	,,	Small bamboos.
26,045	,,	,,	Split bamboos.
48	,,	,,	Charcoal.

181. *Confiscations.*—1,173-13-10 is the amount realized during the year on the sale of confiscated timber, etc., of this sum Rupees 804-15-7 were credited to the department, and Rupees 368-14-3 to informers.

182. *Financial results of the whole Range.*

Expenditure.	RS.	A.	P.		
Establishment.....	13,130	7	1		
Contingencies.....	334	1	10		
Working charges.....	14,955	10	0		
				28,420	2 11

Receipts.

Seignorage, etc...	49,564	13	4			
Sales of timber from depot....	15,928	11	6			
Confiscations.....	804	15	7			
Timber supplied to Department Public Works.....	435	13	11			
Miscellaneous.....	86	1	0			
				66,820	7	4
Balance in favor of Government.....	.....			38,400	4	5
Timber on hand 31st March 1868.....	9,241	12	5			
Felled during 1868-69.....	15,291	4	1			
				24,533	0	6
Deduct sold.....	16,364	9	5			
,, loss in market rates.	457	8	2			
				16,822	1	7
Timber on hand 31st March 1869.....	7,710	14	11			
Deduct deficiency in stock of timber.....	.....			1,530	13	6
Financial result.....	.....			36,869	6	11

183. South Canara.—*Superintendence.*—Mr. Cadell remained in charge of these forests during the first eight months of the official year, but illness compelled him to leave the district on Medical certificate for 3½ months, he rejoined before the close of the year.

184. *Felling Operations.*—Owing to an ample stock of timber in depots little or no felling was carried on during the year. 100 candies of Blackwood were felled on special indent for the Bombay Gun Carriage Department, and about 400 candies of junglewoods were felled on a private indent for coffee cases.

185. *Floating Operations.*—

351 logs of junglewood, 8 ,, ,, Blackwood, 2 Boats,	From Hully Bugle to Condapore.
177 logs of Mango, 27 ,, ,, Blackwood, 11 ,, ,, Junglewood, 6 ,, ,, Teak, 4 ,, ,, Jackwood, 3 ,, ,, Ebony, 3 Boats,	Yeneekul and Sooliah to Mangalore.
70 logs of Blackwood.	From Maloot to Katkatcherry.
80 ,, ,, Junglewood, 31 ,, ,, Teak, 5 ,, ,, Blackwood, 1 ,, ,, Ebony,	From Parapa to Cassergode.
183 ,, ,, Junglewood, 26 ,, ,, Wild Jack,	From Yeneekul to Upinangudy.
117 ,, ,, Junglewood.	Hully Bugle to a distance of three miles.

186. *Conservancy.*—The usual clearing of trees from creepers, etc., and pruning has been carried out, and there has had no loss from fire.

187. *Catechu Jungles.*—These have not been leased out during the year as they require rest, departmental working or at least the marking of the trees by the department seems to be desirable and is under consideration.

188. *Sales.*—100 candies of Blackwood were supplied to the Gun Carriage Department in Bombay; a small amount of Sandal-wood felled in the Northern part of the district sold at 3 Rupees per maund, it is of inferior quality. Timber to the value of Rupees 4,743-12-1, was sold to private purchasers from our coast depots, and 160 candies out of our jungle depots.

334 Candies of timber were supplied to the Department Public Works from our coast depots.

4,000 Rupees worth of timber was supplied to the Department Public Works, in the Mangalore Range but has not been paid for during the year.

Mangowood for packing cases to the value of 2,500 Rupees was supplied to a Merchant at Mangalore but not paid for during the year.

189. *Timber felled by Department Public Works on Seignorage.*

179 logs of reserved timbers containing 217 candies, and 104 logs of jungle-wood containing, 182 candies were felled by the Department Public Works at Seignorage rate which realized Rupees 2,033.

190. *Auctions.*—The annual depot auctions were postponed, and did not take place during the year owing to the absence of the Assistant Conservator.

191. *Plantations.*—The Teak plantation at Parapa shows good growth, a small plantation of Teak mixed with Jack has been formed at Hospett.

192. *Health of Establishment.*—This has been very bad and almost every one on the establishment has suffered from fever.

193. *Financial Results.*

Expenditure.				RS.	A.	P.
Establishment				8,417	6	8
Working charges				13,446	6	11
				21,863	13	7
Receipts.						
Seignorage, etc				9,822	10	7
Sales of Timber from depot				4,823	12	1
Confiscations				10,212	8	3
Timber suppled to Department Public Works				4,910	0	0
Miscellaneous				295	8	0
					30,064	6 11
Balance in favour of Govt...				.....	8,200	9 4
Timber on hand 31st March 1868				35,542	3	2
Felled during 1868-69				7,444	8	0
				42,986	11	2
Deduct sold..	7,620	12	1			
Do. destroyed by fire,&c.	625	11	1			
				8,246	7	2
Timber on hand 31st March 1869				34,740	4	0
Deduct deficiency in stock of Timber				.....	801	15 2
Financial result				.....	7,398	10 2

194. WYNAAD.—*Superintendence.*—On the 25th of May 1868, the range was handed over to Mr. Turnbull by Lieutenant Fullerton. In January, Mr. Turnbull was suspended by the Officiating Conservator as he neglected to answer corres-

pondence, or send in returns, and Mr. Cherry assumed charge of the range on the 5th of February, it then came to light that Mr. Turnbull had embezzled a quantity of the timber in depot, and had left his district without leave, and quitted the country, special reports on the subject are before Government, and it is believed that Mr. Turnbull has been caught in Europe.

195. *Operations.*—Felling operations were suspended owing to the large stock of timber on hand, and only 2,246 cubic feet of timber valued at Rupees 842-4-0, were felled, 9,633¼ cubic feet of Teak were carted from the forests into depots. 22,186¾ cubic feet of Teak were floated from the forest depot at Goondry to Hirnandy depot near Mysore, 1,994 cubic feet of Teak, 192 of Black-wood, and of Honi mere floated from the forest depot at Baigur to Hirnandy depot.

196. *Sales.*—The sum realized only amounts to Rupees 373-13-4, timber to the value of Rupees 33,100 was sold by Mr. Turnbull to two Merchants in Mysore, but Mr. Turnbull has appropriated the money and left the country.

197. *Health of Establishment.*—Fever has been very prevalent.

198. *Financial Results.*

Expenditure.	Rs.	A.	P.	Rs.	A.	P.
Establishment	6,007	7	4			
Working charges.....	2,211	3	9			
				8,218	11	1
Receipts.						
Sale of timber.....	.....			380	13	4
Balance against the forest...	.....			7,837	13	9
Value of timber on hand 31st March 1868.....	44,377	3	7			
Felled during 1868-69.....	842	4	0			
Increase in value of timber..	11,079	4	6			
	56,298	12	1			
Sold to merchants..... Rs. 373 13 4						
Embezzled by Mr. Turnbull 33,100 0 0	33,473	13	4			
Balance on hand 31st March 1869.....	22,824	14	9			
Add decrease in stock.....	.....			21,552	4	10
Financial result, deficit.....	.....			29,390	2	7

199. Nellumbur.—*Superintendence, etc.*—Mr. Ferguson has remained in charge during the year.

200. *Operations.*—105 acres were planted with 1,04,000 teak seedlings.
3,350 ,, of old plantations weeded.
391 ,, pruned.
700 ,, cleared from parasites (Loranthus.)
75 ,, new site for planting felled.
15 ,, do. do. burned.

201. *Felling.*— 220 logs of jungle wood felled.
164 do. do. dragged into depôts.
20,000 saplings felled in thinning operations.

202. *Floating.*— 352 logs floated to coast depôt by establisement.
14,000 saplings do. do. do.
2,960 bamboes do. do. do.

203. *Experimental growth of cereals, etc., with young Teak.*—The experimental growth of dry grains and vegetables amongst the young teak seedlings as practiced in Burmah has been tried and is reported a failure, the teak showing less rapid growth and a less healthy appearance.

204. *Planting of jungle timbers.*—The experimental planting of some of the more valuable timbers of the moist forests of the gauts has been carried on during the year but without favorable results, they all grew well from seed but mostly died out in the drought experienced from December till April : the season was unusually dry and unfavoroble.

205. *Demarcation.*—The plantations west to Nellumbore and the natura forest due north (included in the Government lease) to a circuit of about 22½ miles have been demarcated during the year, traces have been cut and boundry-stones errected at a cost of Rupees 586-6-11. The demarcation was stopped in the feverish son but will be recommenced next October.

206. *Fires.*—A serious fire occured in the plantations in the month of March at the driest time of the year, it swept through portions of the younger plantations : very little damage was done to the young trees, but felled timber to the value of Rupees 5,000 was destroyed in the depôts. At the request of the Collector, Mr. Logan the Sub-Collector fully enquired into the circumstances, but he was not able to arrive at any conclusion as to whether the fire was accidental or incendiary; the plantations and depôts were all fire traced, but the fire was blown over the traces which were 30 to 40 feet wide.

207. *Health of Establishment.*—Fever has been very prevalent as usual.

208. *Financial results.*

Expenditure.	RS.	A.	P.	RS.	A.	P.
Establishment	7,248	8	5			
Working charges	10,059	7	8			
				17,308	0	1
Receipts.						
Sale of timber	6,163	12	8			
,, Saplings	8,986	14	11			
,, Fire wood and bamboos.	661	11	8			
Miscellaneous	93	14	6			
				15,906	5	7
Balance against Government				1,401	10	6
Timber in depôt on 31st March 1868	40,106	15	5			
Add felled during 1868-69	13,135	0	0			
	53,241	15	5			
Deduct sold during 1868-69 ... ... 15,150 9 7						
Deduct destroyed by fire etc ... 5,404 0 0						
	20,554	9	7			
Timber in depôt 31st March 1869	32,687	5	10			
Add deficiency in stock				7,419	9	7
Financial result for the year, deficiency				8,821	4	1

209. FOREST ACT.—*A Contract Law, no advance system.*—Special reports have been forwarded to Government on these subjects.

The Officiating Conservator is of opinion that the Penal Code is sufficient for checking all Forest misdemeanors except simple trespass. As Government is now going to great expense in the formation of fuel reserves and fuel plantatations, it is necessary that some strict rules should be put in force on this subject, a Cattle Trespass Act may also be required.

210. *Jungle Conservancy.*—Special reports on this subject are before Government. In districts where the Department has establishments, it can hardly be to the interest of Government that certain tracts dovetailing with those under the Forest Department should remain under Collectors, and be worked on different principles and without any reference to the Department, it affords an easy opening to smuggling, and causes a great loss of revenue which has been fully exemplified already.

211. *Loss to the Department of the Neilgherry plantations.*—These plantations have been handed over to the Commissioner of the Neilgherries. Exclusive of pay of Establishment, the Department has spent Rupees 18,373, on the Australian firewood plantation at Wellington, Rupees 3,224, on the Eucalyptus building timber plantation at Ootacamund, and 3,735 on the Governor's Shola plantation. When it was proposed to hand over the sholas to the Commissioner, the Officiating Conservator had no idea that a transfer of the plantations was intended also, and he reported that an Officer in special charge, in addition to the Overseers, was not advisable, the plantations are of great value and interest, if an European Regiment is again stationed at Wellington, the plantations at that place will be of the greatest importance, and the Eucalyptus plantations at Ootacamund will, in a few years, render the hills independant of teak from the low country. They have hitherto received most careful attention from Colonel Morgan, and also from the Conservator, and the Officiating Conservator, unless the Commissioner can spare time to give the planting operations careful attention, they should not be extended, or an Officer with some experience should be appointed.

212. *New plants.*—Some new plants of interest were discovered during the year in the mountain forests of South Tinnevelly, and specimens were forwarded to Kew. A new timber tree (a new species of Humboldia) was also discovered in the same forests and the Shenkurani or red-wood mentioned in the last report was found in flower, and turns out to be a species of a genus new to S. India Gluta (in Anacardiaceæ.) Specimens in flower of both have been forwarded to Kew, and specimens of the timber will shortly be forwarded to the Reporter on Indian products.

213. *Botanical publications.*—The last three numbers of the Ferns of British India which have been chiefly prepared at Kew are now ready and are passing through the press, 615 Ferns have been figured in the forty-three numbers.

A sequel to Dr. Wights "Icones plantarum" has been commenced, in which all new plants lately discovered and rare or interesting ones not hitherto pulished will be figured and described, it will be completed in fifteen numbers, and contain 300 plates, two numbers have already been issued and the third is in the press.

214. *The Flora Sylvatica.*—This work in which all the timber trees of Southern India will be figured accompanied with full descriptions, native names and all known uses, has now been commenced, and part one has been issued and part two

is in the press, it is hoped that the work will be of great use to Forest Officers throughout India and Burmah, and that the publication of the plates, and what information is now obtainable will elicit further information as to the uses, and native names in each Province in which case the letter press will eventually be re-published.

215. *Herbarium.*—The Officiating Conservator has collected for this, during his tours, and specimens have been forwarded from time to time to the Museum.

216. *Financial results for the year.*—The expenditure for the year has been Rupees 2,69,700 and the receipts Rupees 3,91,179 against Rupees 2,72,840 and Rupees 4,24,184 for 1867-68, there is a deficiency in the stock of timber on hand of Rupees 70,428 the Financial result for the year under review is properly speaking the excess of receipts over expenditure, minus the deficiency in the stock of timber, but as in former years the Department has not been given credit for any surplus stock of timber (when there has been a surplus instead of a deficiency,) it should be allowed credit for the full amount of the excess of receipts over expenditure. In some forests, timber is sold but not paid for during the year; the receipt of the money therefore does not appear as a credit until the next year. During the year under review, Rupees 53,530-4-2 worth was sold from the Annamallay and Chennat Nair Forest Depots to Government Departments in Bombay, but the sum does not appear as a credit, as the accounts were not settled before the close of the official year.

Net profit for the year	1,31,479
Deduct difference in value of timber on hand 31st March 1869, from the amount on hand 31st March 1868, ...	70,428
Financial Results for 1868-69,...	51,051

I have the honour to be,

Sir,

Your most obedient servant,

R. H. BEDDOME, Major,

Officiating Conservator of Forests.

Financial Statement of the Forest Conservancy Department, for the official year 1868-69, *in comparison with that of* 1867-68.

Forest Ranges.		Charges inclusive of fixed Establishment and Office contingencies.		Revenue inclusive of receipts, seignorage and sale of timber, &c.		Value of stock of timber on the		Remarks.
		1867-68.	1868-69.	1867-68.	1868-69.	31st March 1868.	31st March 1869.	
		RS.	RS.	RS.	RS.	RS.	RS.	
Ganjam ...	Gumsur and Suradah	4,535	3,296	6,841	6,239	1,136	1,064	
Vizagapatam..	Golgondah	1,238	905	284	378	...	.....	
	Cuddapah	6,596	10,360	36,667	38,444	6,869	17,153	
	Kurnool	8,787	14,509	36,189	41,046	4,307	2,553	
	North Arcot	3,873	5,188	9,910	11,126	627	619	
	South Arcot	2,343	3,190	4,310	3,221	44	94	
	Madura	7,704	6,134	5,030	10,523	7,367	1,868	
	Tinnevelly	1,255	7,001	8,156	13,708	...	...	
Coimbatore...	Anamullay	33,210	31,045	58,959	30,489	2,16,547	91,825	
	Bolumputty Chennat Nair and Walliar	4,626	8,166	12,177	4,477	6,792	13,672	
	Mudumallay	54,164	49,795	65,059	60,014	1,86,825	1,74,477	
	Sigur and Sathiamungalum	10,538	7,431	29,152	23,359	31,069	19,403	
	Bhowany	6,676	6,046	15,895	15,856	1,355	1,526	
	Collegal	7,103	6,806	17,846	15,339	2,611	2,151	
	Neilgherry Sholas	5,417	5,280	4,550	3,681	...	...	
	Australian Plantation	1,757	1,518	934	108	...	...	
	Salem	36,679	28,420	53,567	66,820	9,242	7,711	
Malabar ...	South Canara	17,708	21,864	40,043	30,064	35,542	34,740	
	Wynaad	17,177	8,219	15,518	381	44,377	22,825	
	Nellamboor	14,286	17,308	3,097	15,906	40,106	32,687	
	Total...	2,45,672	2,42,481	4,24,184	3,91,179	5,94,816	5,24,388	
Pay of the Conservator, inclusive of Establishment and Office contingencies		27,168	27,219					
	Total...	2,72,840	2,69,700					
Deduct Expenditure		.....	.....	2,72,840	2,69,700			
Actual profit to Government...		.....	.....	1,51,344	1,21,479			
Deduct difference in value of timber on hand on the 31st March 1869, from the amount of the 31st March 1868				83,720	70,428			
	Financial Results...			67,624	51,051			

APPENDIX A.

FOREST OFFICE,
RUSSELCONDAH, 27*th May* 1869.

LIBRARY.

From

MR. T. G. FREEMAN MACCALLY,
Overseer of Forests, Goomsoor.

To

MAJOR R. H. BEDDOME,
Officiating Conservator of Forests, Madras.

SIR,—I beg to forward my Annual Report and Accounts for the official year 1868-69.

2. The forests under my charge have been regularly visited, month after month, inspections have been made of its different portions, by which, during the whole year there has been constant reconnoitring maintained, and every precautionary measure resorted to, as far as may be possible, with the small establishment at my disposal, with reference to conservancy.

3. In addition to the names of forests already reported, I have to add those of Berecote, Kiloon, and Ramluckyam; this latter forest borders on the Duspullah frontier, the northern boundary of my range, it has gained its name from two Sal trees near each other named "Ramo" and "Luckyon," each of which is venerated by the people travelling, who pass them to Duspullah and the Cuttack Districts, it contains the largest Dohn (Conocarpus accuminatus) and Sal of about six to eight feet girth with other trees of the reserved and unreserved kinds. These forests I have specially reserved for Government purposes, allowing the felling under the voucher and license system in those portions of tracts which are not reserved, and limiting the felling of timber within certain dimensions only, conserving the timber of larger dimensions for Government purposes wherever found. I went through the Kiloon Forest up to the foot of the hill range which bounds it westerly where there is a dense defile and in which the rattan grows of small girth, being famous for its malarious influences it was with great unwillingness I got a few people to accompany me to this place, it belongs to the Kookloobah Mootah, and is also noted for its unhealthy stream which forms a junction with the Mahanuddee river of Goomsoor, at the village of Kookloobah; this Mootah may be well considered the most feverish of all the tracts of my range, not one of my establishment or myself has escaped from fever while traversing within it.

4. During the year the whole of the tracts of country from the frontier of Duspullah, to that of Daracote Zemindaries, north to south, and from the frontier of Autghur Zemindary to Pijnessnukah of Goomsoor, east to west have been inspected.

5. While traversing through the tracts under my charge, the firewood of ryots was duly examined and regulated with reference to the size of wood to be used *free af taxation*, as they have been, one and all under the impression, that they could fell any sized wood they procured for fuel, so long as they were ryots; the Curnums and Cargas or heads of villages were referred to paragraph 11 of the Forest Rules, copies of which, had been circulated throughout the talook, so that they might impress it on their minds to conform to those rules, otherwise taxation would be the result, these people, although they had the rules, took no interest to explain their contents to the inmates of their respective villages, they only knew that they were doing wrong when detected by the Forest Department, and not otherwise.

6. The houses of ryots under construction were also examined, and it was found that the privilege to them of building houses of unreserved kinds of wood free of taxation was greatly abused, as in almost every house a few of the reserved woods were to be found, considering the ignorant nature of the Oorialy and Khonds to conform to rules, whom I have to deal with, they were duly warned that should they continue to do so for the future, prosecution would be resorted to.

7. Five hundred and two (502) houses of ryots were burnt during the year, for their re-consruction Two thousand two hundred and forty-seven (2,247) bandy loads of unreserved kinds of wood have been granted free of taxation, as registered by this department; these people being freed from taxation for the building of their houses by the revision of paragraph 10 of Forest Rules in July 1865.

is a great loss to Government. Considering that these fires are annual, and that they do not originate from accidents, but from the sheer carelessness of the villagers extravagantly burning their firewood within doors, and the burning of grass and rubbish near or in the middle of their villages, without taking the least precautionary measures for the safety of their houses, which I have ascertained from personal inquiries made before granting them permits for timber for the re-construction of their houses; and I have, wherever I have seen the burning of grass and rubbish in the middle of their villages during my tours, duly warned them that the villages would be in danger if they did not extinguish their fires, but to no avail. To prevent these annual fires some stringent measures should be adopted when alone they will be less in Goomsoor, and the forests will not be denuded of so much wood annually on this account.

8. In 1865-66 the number of houses burnt were 400. In 1866-67, 200, but the quantity of wood removed from the forest, free of taxation, was not noted. In 1667-68 I specially kept a register of the quantity permitted, so as to ascertain what may be the actual loss to Government, and find, that in 1867-68 I registered 160 houses burnt, for which 767 bandy loads of wood were furnished; and in this year 1868-69, 502 houses were burnt, for which 2,247 bandy loads of wood were furnished, taking together the quantity of wood furnished during the two past years at one Rupee seignorags per bandy load, there would thus be a loss to Government of seignorage alone of Rupees 3,014; and I am certain that the loss to Government of the previous two years for the 600 houses then burnt, would be about Rupees 3,500, as during that period several large villages were burnt.

9. During my tours in the Boogoodah Mootah, a nest of charcoal burners was discovered in a dense valley of the forest, where they had carried on their work of making charcoal of the Reserved and Unreserved woods around them, without the knowledge of the Forest Department; this charcoal manufacture originated from annual firewood licenses, issued by the Aska Factory to wood cutters, who had illegally transferred these for the benefit of the charcoal makers; the latter had been taught the Patent Process of making charcoal at the Aska Factory where they had received every encouragement and support; the whole gang was detected, brought to justice and punished, which at once put a stop to this unauthorized work in the Boogoodah Forest.

10. The requisition of the Assistant Engineer, Berhampore, for timber for Department of Public Works of No. 2 Range, under his charge, was very small till December 1868, when there was a large demand for timber; although it was received late, still he was supplied with 187 logs for the following works: Berhampore Jail, Berhampore District Moonsiff's Court, Berhampore Tahsildar's Cutcherry, Chilka Canal Works, Ganjam Subsidiary Jail, Soanpettah Deputy Tahsildar's Cutcherry and Soanpettah Road Works—during the official year to the value of Rupees 1,298 which with the seignorage for wood felled by Department of Public Works, No. 3 Range, Russelcondah, amounting to Rupees 311-11-0, makes a total on account of Department of Public Works for the year, of Rupees 1,609-11-0.

11. The health of my establishment cannot be reported upon favourably, as one and all of it have had fever, and of these one had small pox also. With reference to myself I regret to say, that I have been suffering with fever since the 15th of April last, and from its effects reduced to such a state of debility as to be bedrid, and am now only convalescing, hence this Report and the accounts attached to it, which should have been forwarded during last month, have been delayed to date.

12. Twenty-three persons were prosecuted during the year for evading Forest Conservancy Rules,—tried by the Sub-Magistrate of Goomsoor for theft and mischief under the Penal Code, and sentenced to short periods of rigorous and simple imprisonment from fifteen days to one month; of this number only eight were fined twelve Rupees and one two Rupees without imprisonment.

13. Financial Results, vide page 2, paragraph 9.

I have the honour to be, &c.,

(Signed) T. G. F. MacCALLY,
Overseer of Forests, Goomsoor.

APPENDIX B.

CAMP CUDDAPAH, *15th April* 1869.

From

Mr. H. H. YARDE,

Assistant Conservator of Forests.

To

Major R. H. BEDDOME,

Officiating Conservator of Forests.

SIR,—I have the honour to submit the Annual Administration Report of the Forests of Cuddapah for the year 1868-69.

Introductory remarks.

2. I have continued in charge of the forests of this range throughout the year, and I have visited most of the hill ranges in the talooks of Pullampett, Sidhout, Poddatore, and Budwail together with that tract of forest which joins the Kurnool District.

Measures taken for extending and improving the forests.

3. I have invariably, on these visits to the forests made the peons accompany me, carrying axes with them, and had cut, all such creepers, as were in our way, and thus, 1,950 Red Saunder trees were cleared in this manner.

Quantity of timber felled and stored in depot.

4. No timber was added to last year's stock, but 1,086,293 lbs. of stumps and roots of Red Saunders have been stocked : as before no licenses are issued for this material. All sales henceforth, will be made by the Department.

Timber, etc., removed on licenses

5. Statement A. shows the quantity of timber, firewood, bamboos, and charcoal removed under licenses issued during the year, realized. Rupees 24,256-4-0. The Railway has paid Rupees 11,806-8-2 into the treasury, on account of wood taken by them during the year for fuel.

Confiscated timber.

6. About 233 bandies of different kinds of timber had been confiscated and sold by public auction. The timber thus seized, was mostly on time expired licenses, and timber of higher seignorage being smuggled with inferior wood. Owing to disputes arising amongst bidders, the value of the timber was remarkably raised, and realized Rupees 1,443-15-0 more than 100 per cent. of its market value.

Timber sold from Government depot.

7. About 549-10 cubic feet of Thumbah timber was sold during the year to merchants, realizing Rupees 687-4-8. The quantity of timber on hand now is cubic feet 5262-1¾ value Rupees 6,181-4-11.

Timber supplied to Department Public Works.

8. Department Public Works have from time to time removed timber from the jungles. No real cash transactions occurred ; but vouchers have been received, and Rupees 250-4-0 have been credited in the accounts on account of seignorage.

Outstanding advances.

9. Outstanding advances amounts to Rupees 46-5-6 which is in the hands of the Overseer for the operations of the Ooperapully plantation, and for cartage of timber found lying in the jungles.

Plantations.

10. Two thousand Red saunder trees have been planted during the year, and about 600 wild mangoe trees were also put out, but have died. The condition of the trees planted in previous years is very healthy, and average in height 15 feet. I was not able to procure any large quantity of Red Saunder seeds, and in consequence have been prevented from undertaking large experiments. I have, however, about twenty beds of seeds at Codoor, and forty-two were at the Ooperapully plantation : the seeds have germinated ; but the young plants are far from being healthy, owing to the constant drought from June last. At Codoor, I have a few beds of sandal-wood trees ; but they have a sickly appearance, and I expect, I will lose

all unless we get the expected showers this month. At Ooperapully nearly sixty measures of Babool seeds and about 100 measures of Nim, were sown broad cast ; but has proved an entire failure. The seeds that were sown with the rains all germinated very well ; but could not withstand the heat, and it was impossible to save them by artificial means. In the reserve at Balpully, and likewise where the fuel contractors have been clearing jungle, I dibbled in fifty measures of Babool seed and Nim. As in the previous case, the seeds germinated well, and if a few more showers of rain followed, I might have had to report good results ; but as it happened otherwise, I have to make a very unsatisfactory remark. In the reserve, where the ground is slightly swampy, some plants have stood out and have grown from two to three feet high.

Forest products.

11. Do not call for any special remark.

* Statement B.

12.* Criminal prosecutions have, on the whole been favourable ; but our establishment is too limited for the purpose of detecting offenders. Cattle have often strayed into our plantations and have destroyed many of the Red Saunder trees: the animals were always impounded ; but this seems no adequate punishment to the owner at all, I did not observe much damage to the forests by grazers of cattle ; but the fires have been unusually large this year.

Criminal prosecutions of Trespass and Damages.

Health of establishment.

13. Fever has been more prevalent and of a severe type. The whole of the establishment has suffered severely, and I myself was frequently attacked. Balpully especially was very feverish, and I could not get peons to remain beyond a week at that place; but notwithstanding there were many severe cases, I am glad to report, that no deaths occurred.

New or rare plants.

14. No new or rare plants have been found.

Summary of operations.

15. I have carefully inspected the forests and made observations as to where jungle lands could be given over for cultivation. The revenue authorities generally now confer with me when any land is applied for by ryots, and this method prevents any clearing of valuable forests. The license and voucher system is still retained in the range. Constant visits into the forests have enabled me to remark where it is necessary to rest tracts, and with reference to these observations the forests have been worked.

For the purpose of forming another fuel reserve, I visited a block of jungle near Balpully, which is about two miles in extent. I am going to take measures this year for fencing it. There appears to be difficult only about the exclusion of cattle, the village being so near.

From 1st May next, I am going to take over charge of the tracts for plantation alluded to in G. O., No. 248, dated 28th January 1869, and Mr. Brougham, the Overseer who is now doing duty at North Arcot, will be placed in charge of them.

16. Statement C. exhibits the number of free licenses issued during the year to ryots ; both for agricultural and house building purposes.

Financial Results vide page 3 paragraph 22.

I have the honour to be, &c.,

(Signed) H. H. YARDE,
Assistant Conservator of Forests.

A.

Statement showing the quantity of Timber, Bamboos, Firewood, &c., issued under Licenses in the Cuddapah Forests for the year 1868-69

Months.	Timber.	Firewood.	Engine Firewood.	Bamboos.	Charcoal.	Bark of woods.	Sale of confiscated Timber.	Sale of Depot Timber.	Seignorage paid by D. P. W.	Palmyrah.	Total.	Remarks.
	RS. A. P.	RS. A. P.	RS. A. P	RS A P.	RS. A. P.	RS.	RS. A. P.	RS. A. P.	RS. A. P.	RS.	RS. A. P.	
April 1868.	1,531 0 0	105 0 0	935 15 0	41 10 0	43 6 0	21	0 5 0	.....	.....	.	2,678 4 0	
May ,,	1,737 14 0	76 0 0	1,246 11 2	48 12 0	15 6 0	...	.....	12 8 0	.....	19	3,156 3 2	
June ,,	2,317 13 0	81 0 0	1,064 12 5	51 6 0	5 12 0	...	....	.....	.....	17	3,537 11 5	
July ,,	5,685 2 0	93 0 0	561 9 0	30 8 0	2 14 0	...	.....	164 6 0	.....	12	6,549 7 0	
August ,,	894 5 0	183 8 0	.....	27 14 0	23 8 0	...	....	.....	54 0 0	17	1,200 3 0	
Septr. ,,	832 13 0	112 0 0	... .	30 6 0	2 4 0	...	.....	46 7 4	.....	17	1,040 14 4	
October ,,	1,122 7 0	442 0 0	563 6 4	32 4 0	68 0 0	12	.....	130 6 8	.....	...	2,370 8 0	
Novr. ,,	1,219 0 0	552 0 0	....	31 2 0	50 6 0	30	1,428 8 0	174 9 4	.....	4	3,489 9 4	
Decr. ,,	1,272 11 0	215 0 0	1,839 15 7	49 0 0	41 12 0	...	.....	49 14 4	12 0 0	55	3,535 4 11	
January 1869.	1,530 0 0	289 8 0	4,872 13 0	78 0 0	41 2 0	4	13 10 0	.....	18 0 0	...	6,847 1 0	
February ,,	1,199 0 0	127 0 0	.....	60 10 0	44 8 0	69	0 8 0	109 1 0	....	...	1,609 11 0	
March ,,	1,197 0 0	207 8 0	721 5 8	47 12 0	43 9 0	45	1 0 0	.....	166 4 0	...	2,429 6 8	
	20,539 1 0	2,483 8 0	11,806 8 2	529 4 0	382 7 0	181	1,443 15 0	687 4 8	250 4 0	141	38,444 3 10	

(Signed) H. H. YARDE,
Assistant Conservator of Forests,
Cuddapah and North Arcot.

B.

Register of the Forest offences tried before the several Magistrates in the Cuddapah Range for the year ending 1868-69.

Place where, and date when offence was committed.	Offence.	No. of persons charged.	By whom tried.	Result and punishment if convicted.	Remarks if any, recorded by trying Officer, as to conduct of department.	Informer.	Remarks of Forest Officer.
Sidhout ... ... 10th Aug. 1868.	Theft of Timber, Sec. 379 I. P. C.	3	Head Assistant Magistrate.	Dismissed	.....	Duffadar Narrainsawmy.	
Do. ... ... 11th do. ...	Do. do.	1	Sub-Magistrate.	Five Rupees fine or 6 days' imprisonment.	.....	Do.	
Do. ... ... 18th November.	Do. do.	8	Do. ...	First and second Prisoners fined 5 Rupees, remainder 2 Rupees or 3 day's imprisonment, and 8 Prisoners released	.....	Peon Siddapah.	
Do. ... ... 20th Jan. 1869.	Do. do.	3	Do. ...	5 Rupees fine each or five days' simple imprisonment.	.....	Peon Sheikh Hussain.	
Do. ... ... 7th March ...	Do. do.	3	Do. ...	10 Rupees fine each and five days' imprisonment, in default of payment of fine, one month's imprisonment...	.....	Peon Siddapah.	
Budwail ... ... 4th March 1868.	Do. do.	1	Do. ...	Fined.	.....	Peon Kistnamah.	
Do. ... ... Do. ...	Do. do.	1	Do. ...	Imprisoned.	.....	Police Peon.	
Do. ... ... 11th do. ...	Do. do.	4	Do. ...	Fined.	.....	Do.	
Do. ... ... 16th May ...	Do. do.	1	Do. ...	Do.	.....	Peon Kistnamah.	
Do. ... ... 8th June ...	Do. do.	1	Do. ...	Imprisoned...	.....	Do.	
Do. ... ... 28th July ...	Do. do.	2	Do. ...	Do.	.....	Duffadar Narsima Charlu.	
Do. ... ... 10th Aug. ...	Do. do.	2	Do. ...	Do.	.....	Do.	
Do. ... ... 1st March ...	Do. do.	6	Do. ...	Fined...	.....	Peon Mahomed Saheb.	
Royachoty ... 3rd Jan. 1869.	Do. do.	1	Do. ...	Fined 8 Annas.	.....	Reddy of Chintacontah.	
Do. Do. ...	Do. do.	3	Do. ...	Two days' imprisonment each	.....	Do.	
Poddatore ... 31st Dec. 1868.	Do. do.	16	Do. ...	2 Rupees fine each, or three days' imprisonment... ...	.....	Village Magistrate.	

(Signed) H. H. YARDE,

Assitant Conservator of Forests,

Cuddadah and North Arcot.

C.

Statement showing the Free Passes issued during the year 1868-69 *for Agricultural and House Building purposes in the Cuddapah District Forests.*

Range.	Number of free Passes.	Number of bandy loads of jungle wood.	Number of bandy loads of bamboos.	Remarks.
Cuddapah	242	242	242	

(Signed) H. H. YARDE,

Assistant Conservator of Forests,
Cuddapah and North Arcot.

APPENDIX C.

ASSISTANT CONSERVATOR'S OFFICE,
CAMP KURNOOL, 3rd April 1869.

From

MR. T. SHEFFIELD,
Assistant Conservator of Forests.

To

MAJOR R. H. BEDDOME,
Officiating Conservator of Forests.

SIR,—I have the honour to submit a short review of the forest operations in the Kurnool District for the year 1868-69.

Introductory Remarks.

2. I have continued in charge of the forests of the district throughout the year and have visited all portions of them several times during the year. In reviewing the operations of the forests I must remark that we have had a great deal of misfortune to contend against and should the results not be considered as satisfactory as they ought to be, I beg that these misfortunes may be considered. For the first half of the year I was so much troubled to get Mahouts, and when got they became useless so soon from fever that, the Elephants could not be kept at work more than half their time; at last I was quite disgusted with the business and resolved to try village people, and I am very glad now that I did, for since getting them I have had no trouble with the Elephants beyond a scarcity of water for them which is unavoidable in the dry season in these forests. At times I have had more than half my Establishment laid up at once with fever, and the people engaged in the place of those sick, being new to the work, were of very little good. The fever has now a great deal abated and my Establishment is again in good working order, but I am sorry to say it has carried off 4 of the Establishment, considering all these circumstances I think I may say that the financial results are satisfactory.

3. *Forest Improvement.*—Very little has been done in the way of forest improvement on account of the state of the Establishment, but a few hundred trees have been cleared of creepers, the outlying timber cleared of grass and brushwood to protect it from forest fires, blocks of forest for charcoal manufacture for iron smelting, and reserves for Elephant feeding grounds have been marked out and the forests classified for future operations. This is a very necessary measure for Conservancy and as it has received the approval of the Collector, I hope no delay will occur in bringing it into force: the objects sought to be obtained by this measure are threefold, a reserve, a forest for felling on License, and a forest for free felling by ryots, and will be best understood by quoting the following :—

"I was directed in your letter No. 900 of 5th September 1868, to divide my forests into three "portions, viz., 1st reserved to be worked only by Departmental Agency; 2nd forest open to mer- "chants and other for felling on license, and 3rd forest open for free felling by ryots but also felling "on license. The reserved part is that between the Nundy Cunnama ghaut road and the red pencil "line which I have drawn near the Yellegode Cunnama ghaut, I should think there are about 200 "square miles of forest in this space, and as it contains some of the best forest in which there is "a great number of fine young teak saplings, some ripe teak of inferior size, and large quantities "of splendid Nalla Muddie and Yeggie, and as it is the nearest source of supply for my depôt at "Nundial, and also from the other side nearest for my depôt at Cunbum, I would recommend that "it should be demarcated and notice officially given that felling in this reserve, or allowing cattle "to graze in it should be punishable by imprisonment; yet it is so difficult to obtain convictions "where there is generally only one peon to prove a case, that I fear notice to the above effect will "do little good till forest officers have power of summary conviction."

"The second division which is open to merchants and other people to fell on license includes "the whole of the hill forests both north and south of the reserved portion. To the south of the "ghaut road the forest is far inferior to that on the north of it, yet timber of all kinds large enough "for the usual wants of the people can be easily obtained, except in the vicinity of Roodrar where "it has all been felled for making charcoal for iron smelting this felling is now confined to inferior "Jungle woods and young trees of the reserved kinds are springing up in abundance. There is "one small valley which is almost wholly teak, it was cut over yearly until the Department was "established, and the shoots from the former trees are now growing well. Although they will not "make good timber yet they will I think make useful wood for local consumption."

"To the north of the reserved forest there is a stretch of 30 miles of moderately wooded forest "with some patches here and there of very superior growth, the breadth of this portion equals the "length so that there is no lack of forest for felling on license. All the forests on the plains at the "foot of the hills which average three miles broad the whole length of the district on the west of the "hills, but not more than one mile on the east are open to the ryots for felling free for agricultural "purposes, and for firewood, and are also open for felling on license. This portion does not "contain any valuable timber except Ippi, but there is a good supply of firewood."

4. *Roads.*—The road sanctioned in G. O., No. 2,580, of 1st November 1867, and 4 miles of which were completed last year from Local Funds has been completed this year to the foot of the hills, a distance of three miles, from forest funds. Rupees 3,700 were sanctioned for these three miles, but it has been completed at a cost of Rupees 2,500, leaving Rupees 1,200 unexpended. This road was recommended to enable us to bring out timber of large scantling for which it was thought there would be a great demand in the district, there are several large Cutcherries to be built and I thought our timber would be used in them, in fact I received letters from the Public Works Officers that the timber would be wanted and had made arrangements for the supply, but I have lately received intimation from the Assistant Engineer in charge of the Cumbum range, that our timber will not be used in the new buildings, or at least only a small quantity as posts, &c.; but that teak will be got from Madras for the roofs, doors, and windows of all the works. This is a great pity, for if we do not have occasion to bring out large beams, the road loses half its value, it will of course always be useful both to the Department and to the public, but we could have managed to bring out the size of timber used generally in the district, without the road. The public now use the road in large numbers, formerly they would go from Nundial to Cumbum or *vice versa* by the Nundy Cunnama pass but since the man-eating tigers have frightened travellers from that pass they go by the new road, over Mutty Conda and down by Poolalcherroo on the eastern or Cumbum side; this road is also much nearer than the Cunnama pass road but only available for carts to the foot of the hills on the east, and from foot of the hills on the west. The hill road is very rough in parts and can only be used by foot travellers.

5. *Timber Felled.*—There being nearly 4,000 feet of felled timber in the forest at the beginning of the year which had to be got out, and not wishing to keep a large stock in depot as it gets deteriorated by exposure, I did not fell any fresh timber this year, but confined myself to getting into depôt that already felled; from causes which I have already explained I had great trouble with the Elephants which threw back the work considerably, but I have got all the wood in depôt, 3,000 cubic feet were dragged by the Elephants to foot of slip and $755\frac{6}{12}$ cubic feet by contract. At the end of December 1868, the Madras Irrigation and Canal Company indented for 2,510 Cheriman (Conocorpus latifolia) poles for Telegraph posts and as you had directed me not to allow Contractors into the forest to fell them on account of the destruction they would cause, the poles had to be felled under my orders and carted to the different Stations on the Canal, and were required by 15th March, so that I had only $2\frac{1}{2}$ months to make all arrangements, fell and deliver them. For the sake of conservancy I distributed the felling over the whole length of the forest, thinning out where they grew plentifully and leaving untouched those places where the tree is scarce, so as to make it beneficial to the forests while at the same time yielding us a return. The poles had to be delivered at eight different stations on the Canal, viz., Cuddapah and Dhoor in the Cuddapah District; Chintagunta, Ayaloor, Velapanoor, Jupaud, Ulloor and Kurnool in the Kurnool

District, these different distances from the forest necessitated different prices to be paid for carriage of the poles, but the average cost of each pole is Rupees 1-8-0, and we received from the Company Rupees 2 per pole which leaves a profit of annas 8 on each or for the whole Rupees 1,255-0-0.

All the poles have been delivered, but only Rupees 2,900 received, the remainder of the poles has not been inspected by the Officers of the Company, but after inspection payment will be made and the amount carried to the accounts of 1869-70.

6. *Forest Cattle.*—Our forest cattle are only 2 Elephants, we had two pairs of Bullocks and a pair of Buffaloes for bringing in Confiscated timber, but as smuggling has almost ceased we had no work for them and sold one pair of bullocks and the pair of buffaloes, and of the pair of bullocks we kept, one died in the month of February, and the odd one was sold for Rupees 40-0-0.

The Elephants have dragged from the forest depot and slipped 3,000 cubic feet of timber during the season, their work valued at the rate of annas 5 per foot gives Rupees 937-8-0 as the amount of work done and the cost of their keep has been Rupees 981-0-10. They would have been able to do twice the quantity of work they did, had I had men to work them, in addition to this they have collected a number of butts and pieces which will be got out this year.

7. *Timber, &c., Taken on License.*—The subjoined statement shows the number of loads of Timber, Bamboos, Charcoal and poles brought out from the forest under licenses and free during the year.

Description of Timber.	Bandy Loads.	Head Loads.
Reserved Timbar, at Rupees 3 per Bandy ...	6,273	.....
Do. do. at ,, 2 ,, ...	4	
Junglewood at ,, 1 ,, ...	10,425	
Bamboos at Annas 5 ,, ...	6,397	7,969
Charcoal at Annas 1 per Cavidy load.	.....	18,203
Firewood at Annas 4 per Bandy load.	5,422	
Do. Free ,, ...	1,042	
Agricultural wood	960	
Total ...	30,523	26,172

8. *Confiscations.*—Our confiscations continue on the decrease and will in time I hope cease to be an item in our accounts. During the year confiscated wood to the value of Rupees 1,125-0-0 has been sold. Of this amount Rupees 750 has been credited to Government and Rupees 375 paid, or is now in the Talook Treasuries for payment to informers. Most of the confiscations are made by the Departmental peons, but some by other people, and in all cases we have received great assistance from the village authorities, indeed without their assistance it would be impossible to get along with any degree of satisfaction to ourselves or to any one else.

The prosecutions on account of smuggling have been numerous as will be seen from the register of forest offences submitted to you quarterly, but they have been for trifling breaches of our rules and, although they have in most instances been severely dealt with by the Magistrates, the amount derived by the sale of the wood was very little.

9. *Timber sold from depots.*—We have sold $503\frac{7}{12}$ cubic feet from the depôt to the public and supplied $1,561\frac{8}{12}$ cubic feet to the Department of Public Works. At the beginning of the year we had $551\frac{11}{12}$ cubic feet in depot which with the $3,755\frac{8}{12}$ cubic feet received this year from the forest, makes a total of $4,307\frac{7}{12}$ cubic feet to be accounted for, of this quantity we have sold and supplied as above $2,065\frac{8}{12}$ cubic feet and $199\frac{8}{12}$ cubic feet has been destroyed by white ants, &c., leaving $2,042\frac{8}{12}$ cubic feet which is now in depot. This timber is in large logs and not suitable for the ryots but will be taken by some public department or some Company I have no doubt, and to meet the demand of the ryots and the merchants I intend felling timber of smaller size this season.

10. *Timber supplied to Public Departments.*—In addition to the timber supplied to the Department Public Works from our depôt, we have supplied 39 bandy loads of timber to the Department Public Works, Revenue Department, and Police Department on license.

11. *Advances.*—There are no outstanding advances.

12. PLANTATIONS. *Cinchonas.*—The 16 cinchonas that were alive when I submitted my last report all died off during the dry hot weather that followed, and since then we have not tried any more nor do I think it to be of any use to continue the experiment any longer.

13. *Teak.*—The few hundred plants put down the year before last are not thriving and the plantation has not been extended, in fact the climate is far too dry and hot to have the least chance of making plantations of timber trees a profitable thing, and I think I am not wrong in saying that all our attention must be turned to preserving the natural forests, these with care and proper attention will reproduce sufficiently fast to supply all the demands likely to be made on them. Teak will grow well in this district for I have some young trees in the Nundial Nursery only three years old that are twenty feet high and a foot in circumference but they have had great care and attention, being regularly watered, &c., but the care could not be bestowed on large plantations if it was intended they should repay the money spent on them.

14. *Avenues.*—Our Nundial Nursery which is kept up at the cost of the local funds is well stocked with trees suited for avenue planting such as Dirisana (Acacia speciosa) Yapa (Azadirachta Indica) Tamarind (Tamarindus Indica) Mango (Magnifera Indica) Portia two species Thespecia populnea and Thespecia rear (Casuarina Muricata) and (Bignomia suberosa) Indian cork tree. I have about 500 of each kind ready for transplanting in the rainy season and expect a fresh supply of seeds shortly.* Last season I supplied about 1,000 plants in bamboo baskets to the Tahsildars for road side planting, and this season there will be a large demand, as there will be the new Cutcherry sites to plant in addition to the usual avenue planting; it is rather expensive by placing the plants in baskets as they cost something and the cost of their carriage from the Nursery to the road sides is largely increased, but I think it the best plan after all. I have tried other methods and always find that the coolies entrusted with the planting do it in such a careless manner that seventy-five per cent. of the plants die in the first season, and that those that do live do not thrive.

15. *Experimental Sowings.*—I have sown seeds of 30 kinds of Jungle trees for experiment but I find none of them so quick growing as the kinds mentioned above for avenues, except the Nelia Tuma (Acacia speciosa) this grows fast if at all cared for and appears about the one best adapted for Railway fuel plantations in this district. The Casuarina also is well suited as it grows quickly if the soil is not too stiff.

16. *Health of Establishment.*—Fever has been very prevalent during the year and the Establishment has at times been quite disorganised by it, not one has escaped being laid up, and 4 have died.

17. *The Yella Conda Hills* in the Cumbum Talook are already beginning to improve, they have been in my charge only two years but the revenue derived from them this year is almost double that taken last year, smuggling which used to be so frequent there has almost ceased and the forest itself is carefully conserved.

Financial Results, Vide pages 5 and 6, paragraph 37.

I have the honour to be, &c.,

(Signed) T. SHEFFIELD,
Assistant Conservator of Forests.

Register of Forest Offences tried before the several Magistrates in the District of Kurnool, during the year 1868-69.

Place and date where offence was committed.		Offence.	No. of persons charged.	By whom tried.	Result and punishment if convicted.	Remarks if any recorded by the Officer as to conduct of Department.	Informers.	Remarks of Forest Officer.
Nundial	20th April.	Stealing Timber.	7	Sub-Magistrate of Nundial.	Fined Rupees 10 each or 7 days' imprisonment in default.	...	Tannadar, Cassim Saib.	* This case is probably not ended, the prisoner proved getting a license 4 months previous and the Revenue Inspector gives evidence the timber is old whereas my people deposed, it is new timber. † This man is a great timber merchant and for the last 4 years carried on smuggling to a large extent but could never before be convicted.
Lingumdinny ...	21st Do.	Do.	4	Sub-Magistrate of Sirwell.	One fined Rupees 5 the others Rupees 3 each or 4 days' imprisonment.	...	Peon, Russell Saib.	
Do.	28th Do.	Do.	2	Do.	Fined Rupees 5 each or 5 days' imprisonment.	...	Russell Saib ...	
Allamore	20th Do.	Do.	2	Do.	Do. Rupee 1 each or 3 days' imprisonment.	...	Village Curnum.	
Eranapaud... ...	11th May.	Do.	2	Sub-Magistrate of Nundial.	Do. Rupees 2 each or 2 days' imprisonment.	...	Tannadar ...	
Cheycul-Mury ...	5th Do.	Do.	2	Sub-Magistrate of Sirwell.	Do. Rupees 2 each or 2 days' imprisonment.	...	Police No. 249.	
Eranapaud... ...	30th June.	Mischief.	1	Sub-Magistrate of Nundial.	Do. Rupees 3 or 3 days' imprisonment.	...	Tannadar ...	
Do.	18th Do.	Stealing Wood.	1	Do.	Dismissed prisoner insane ...	...	Do.	
Singavarum ...	24th July.	Do.	1	Do.	Dismissed, prisoner proved having a license.*	...	Tannadar Hissain Saib.	
Arrivarumu ...	24th Do.	Do.	1	Sub-Magistrate of Koilkuntla.	Fined Rupee 1	...	Village Curnum.	
Mootailpaud ...	18th March.	Do.	1	Deputy Magistrate of Nundial.	4 month's rigorous imprisonment and Rupees 50 fine or a further 2 months' imprisonment†.	...	Reddy of Mootail-paud.	
Annapoor	26th May.	Stealing timber.	3	Deputy Magistrate of Nundial.	Fined Rupees 15 each or rigorous imprisonment for a month.	...	Police Constable.	

Bandiathcoor ...	8th June.	Stealing Timber.	3	Deputy Magistrate of Nundial.	Fined Rupees 40 each or rigorous imprisonment for 3 months.	...	Police Constables ...	* The evidence of one peon not enough to prove guilt.
Cuddamul Calva...	24th July.	Do.	3	Sub-Magistrate of Nundial.	Dismissed not proved*	...		
Shinthalayapilly...	27th August.	Do.	1	Do. of Koilkuntla.	Do. do.†	...	Abulasum ...	† The Department were not called in this case.
Nundial	27th July.	Do.	4	Do. of Nundial ...	Dismissed not proved	...	Hussian Saib.	
Buswarporam ...	14th Nov.	Do.	1	Do.	Do. do.	...	Sulla Ramiah.	
Nala Calva... ...	12th Oct.	Do.	1	Do. of Arthmacoor.	Fined Rupees 7	...	Vitoburom ...	
Buswarporam ...	24th Nov.	Do.	2	Do. of Nundial ...	Fined Rupees 10 each	...	Peon Mossim Saib.	
Cooragoonda ...	12th Dec.	Do.	1	Do. of Arthmacoor.	Fined Rupees 20	...	Not known ...	
Madavaram... ...	25th do.	Do.	1	Do. of Nundial ...	Fined Rupees 20 and 25 days' rigorous imprisonment.	...	Atchimah ...	
Iscalla	25th Jan. 69.	Do.	1	Do. of Arthmacoor.	Fined Rupees 70	...	Karvaloo Naidoo.	
Eranapaud... ...	22nd do.	Do.	1	Do. of Nundial ...	Fined Rupees 7 or 7 days' imprisonment.	...	Eswaramiah ...	
Boyalacoontla ...	22nd do.	Do.	1	Do.	Fined Rupees 10 or 7 day's imprisonment.	...	Not known ...	
Do.	21st do.	Do.	2	Do.	Fined Rupees 10 each and 15 days' imprisonment or a further 7 days.	...	Do.	
Govindapilly ...	15th Feb.	Do.	6	Do.	Fined Rupees 4 each or 6 days' imprisonment.	...	PoliceInspetor.	
Yellegode	28th do.	Do.	4	Do. of Arthmacoor.	Fined Rupees 8 each	...	Assistant Conservator of Forests.	

CAMPS YELLEGODE,
26th April 1869.

(Signed) T. SHEFFIELD,
Assistant Conservator of Forests.

APPENDIX D.

CAMP CUDDAPAH, *15th April* 1869.

From

MR. H. H. YARDE,
Assistant Conservator of Forests,

To

MAJOR R. H. BEDDOME,
Officiating Conservator of Forests.

SIR,—I HAVE the honour to submit the Annual Administration Report of the North Arcot Foresst for the official year 1868-69, and its accompaniments.

Introductory remarks and summary of operations.

2. I have continued in charge of the Forests in this district throughout the year, and made several tours of inspection, but sorry that I was unable to protract my stay in several places owing to the urgent nature of the duties in the Cuddapah Range, also under my charge.

Most of the forest tracts were however travelled over by my Overseer, who had exerted every means to enforce strict supervision by the Police, to the felling by merchants in the jungles, and to arrest fires.

With reference to G. O. No. 2,909, dated 20th November 1868, I should have taken over charge from the Collector, of the Goriattum jungles, but as Mr. Robinson, the Collector, was much opposed to it, and seems to have made reference to the Board of Revenue on the subject, consequently it had not been incorporated with our jungles.

The license and voucher system has been the only method by which the forests were worked, and where it was found necessary to protect any particular tract of forest, grant of licenses were refused.

Measures for the prevention of smuggling firewood, etc., from our tracts in the Goriattum direction was taken: but our cares were next to useless, owing to certain jungle tracts, the property of Polygars, and other tracts the property of Government under district management, lying contiguous to ours. Timber, etc., if even smuggled is quite safe when it is covered by a Polygar's or Moinagar's pass, and that this practice is in use I may instance the excess of firewood in the Amboor Railway Station yard.

The stumps and roots of Red Saunders found in the jungle tracts under our control in the Chendragherry Talook became an important subject of consideration, and with due reference to the Collector of the district it was accordingly settled to collect the material departmentally. A depôt will be formed at Balpully, in which, the material now being collected, will be stored and sold on demand at certain fixed rates per 1,000 lbs. The Collector has also reserved the same, found in his jungles, which joins our limits of Cuddapah and North Arcot, and the ready arrangements will be acknowledged, by the door of smuggling being henceforth shut.

Many inroads into our limits are being made by the Polygars of Kurcumbaddy and Kistnapooram. On one occasion I at once, in company with the Revenue Inspector of the Division, travelled over the whole of the disputed boundaries, and traced temporary ones, but as the Polygars were dissatisfied with the correctness of our traces, and as they claimed all the hills and forests near their lands, I referenced the Collector, who has kindly instructed the Tahsildar to accompany me, and to settle the alluded disputes; with due reference to the pymash accounts. I am of opinion now, that the matter will be quickly settled.

Timber felled and stored in depot.

3. The quantity of timber on hand was quite equal to any demand that was likely to be made on the depot, consequently no timber was felled and added to our last year's stock.

Timber, etc., removed from the forest under license.

4. Statement A exhibits the quantity of timber, firewood, bamboos, etc., removed from the forests on license.

Confiscated Timber.

5. Nearly 40 bandy loads of timber, were seized during the year under review ; in most casses the timber was detected in the jungles, and had been clandestinely felled.

Timber sold from Government depot.

6. The local markets, of which there are many, suit the requirements of merchants and other buyers : consequently, it is only occassionally we can sell our timber, and only when large logs are required.

Department Public Works, Vouchers.

7. No timber has been sold to the Department Public Works The firewood used for kiln purposes for the Central Jail at Vellore was contracted for, consequently the contractors were necessitated to take out licenses for the same.

Outstanding advances.

8. Outstanding advances amount to Rupees 91-1-1 which is in the hands of the Overseer North Arcot for the operations of Plantations, and for removal of confiscated timber from the jungles.

Ammerdy Plantation.

9. About ten Cawnies of ground were poloughed up in May last and forty Measures of Katvah (acacia speciosa) were sown broad cast; but failed germinating. For sowing of this kind, seasonable rains are wanted, and in this respect we failed very much last year. The seeds however, that were sown in beds and regularly shaded and watered, have thriven more satisfactorily. I had also put down a few pounds of seeds of Mandary, (Mountain Ebony) Nim, Cassia Roxburghia, and Red wood (Adenanthera Pavonina) which have germinated well. The condition of the trees planted last year are healthy, except the Red Saunders, of which, there are about 250 plants that look sickly, but may revive with the expected showers this month. The plants that were not moved from their nursery beds are however very healthy, owing to its being shaded by the American cotton plants. 1,081 plants of different kinds were put up during the year, of which, 600 have died and several look very unhealthy from constant drought. Casuarina seeds were also attempted on a small scale, and though I am unable to report much loss, I cannot say that the plants will thrive well : this, I think, arises from the Casuarina prefering a salt and sandy soil. We are unable as at other places to form nurseries on the ground for these seeds, owing to ants, which completely unfit the seeds for growing : we have therefore to put the seeds in earthen tubs, and remove the young shoots to the ground after they get three or four inches high. 200 plants have been put out, and about 400 more are now ready to be transplanted with the rains.

Trivellum Plantation.

10. Our operations in this plantation were also very much retarded by dryness ; but I am quite prepared with 15,000, plants for the first rains. We however put out 7,110, and of this number there has been 300 casuals. Vacancies have also happened in last year's planting ; but was quickly replaced. More wells have had to be sunk, and the increased number of plants required as to put on more coolies, owing to which the expense has been increased. There are 116 beds in the nursery of plants of three month's old, and it is estimated to contain about two lacs of plants : besides this, there are 15,000 plants strong and sufficiently healthy to be put out, 2,400 yards of the land made over to us by the Collector for extending the plantation was fenced, and except that a few nurseries were formed, nothing more had been done to plant it. There are ample plants however ready for this purpose ; but the season is too adverse. A borer is occasionally found on the Plantation. The Larvæ is generally detected by the saw-dust-like powder seen under the trees, and the last one that was seen and furnished me by my Overseer differs in colour from those I have seen previously ; being of a dirty light red, in other respects it is similar to the white borer. The young plants are seriously damaged by the Imago, and little boys are employed to dig them out of the sand and destroy them.

Health of Establishment.

11. The health of the establishment has, on the whole, been good ; but the Kurcumbody Duffadar of forest died of fever.

Criminal prosecutions of Trespass and damages.

12. Statement B. exhibits the number of prosecutions. Most casses have been obliged to be departmentally settled. Actual detection rarely occurring. The fences have frequently been broken into at Ammerdy, and many promising beds destroyed by cattle; the cattle were invariably caught and impounded. The damage caused to the Forests by cow-herds is immense, and unless excluded, and lopping of young trees and fires are fully stopped, I fear the loss will yet continue to be great.

Free Licenses.

13. Statement C. exhibits the number of free licenses given during the year to ryots for agricultural and building purposes.

14. Financial Results, Vide page 7, paragraph 48.

I have the honour to be, etc.,

(Signed) H. H. YARDE,
Assistant Conservator of Forests.

Form A.

Statement showing the revenue of the North Arcot Forests for the year 1868-69.

Months.	Timber.	Firewood.	Bamboos.	Charcoal.	Palmyrah.	Bark of woods.	Sale of confiscated timber.	Sale of Depot timber.	Seigniorage paid by D. P. W.	Total.	Remarks.
	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	
April 1868.	484 0 0	239 13 0	303 4 0	36 8 0	...	5 0 0	.....	.....	.....	1,068 9 0	
May ,,	352 4 0	159 4 6	276 7 0	43 12 0	...	3 12 0	.....	.....	.....	835 7 6	
June ,,	368 4 0	125 3 6	353 2 0	30 6 0	...	24 6 0	.....	.....	.....	901 5 6	
July ,,	280 0 0	131 0 0	317 1 0	34 1 0	...	9 6 0	206 12 5	8 0 0	.....	986 4 5	
August ,,	425 4 0	142 6 0	277 13 0	28 10 0	...	11 0 0	.....	.....	.....	885 1 0	
Septr. ,,	262 5 6	166 2 6	358 4 0	48 15 0	...	6 4 0	65 10 0	.....	.....	907 9 0	
October ,,	471 4 0	219 2 6	486 11 0	35 5 0	...	4 10 0	.....	.....	.....	1,217 0 6	
Novr. ,,	362 0 0	230 12 0	406 8 0	32 15 0	...	7 8 0	.....	.....	.....	1,039 11 0	
Decr. ,,	429 8 0	213 8 0	307 8 0	61 8 0	...	7 6 0	113 3 8	.....	.....	1,132 9 8	
January 1869.	265 0 0	210 1 0	142 13 0	25 12 0	...	8 6 0	.....	.....	.....	652 0 0	
February ,,	157 0 0	330 11 6	205 10 0	66 1 0	...	5 10 0	.....	.....	.....	765 0 6	
March ,,	191 0 0	246 8 0	236 14 0	48 14 0	...	11 14 0	.....	.....	.....	735 2 0	
	4,047 13 6	2,414 8 6	3,671 15 0	492 11 0	...	105 2 0	385 10 1	8 0 0	.....	11,125 12 0	

CAMP CUDDAPAH,
15*th April* 1869.

(Signed) H. H. YARDE,
Assistant Conservator of Forests.

B

Register of the Forest offences tried before the several Magistrates in the North Arcot Range for the year 1868-69.

Place where, and date when offence was committed.			Offence.	No. of persons charged.	By whom tried.	Result and punishment, if convicted.	Remarks, if any, recorded by trying Officer as to conduct of department.	Informer.	Remarks of Forest Officer.
Poloor, Vellore Talook.		March 1868.	Stealing Timber uuder Sec. 379 I. P. C.	1	Sub-Magistrate.	Dismissed.	.....	Peon Yethirajooloo.	
Arasumpett	do...	29th Feb. ,,	Do. do...	1	Do.	To pay a fine of 30 Rs. in default seven days' simple imprisonment.	.....	Overseer.	
Vellacal	do...	16th May ,,	Burning Charcoal ...	14	Do.	Each two days' simple imprisonment.	.....	Do.	
Do.	do...	Do.							
Malymupett	do...	4th do. ,,	Mischief 426 I. P. C.	1	Do.	Dismissed.	.....	Do.	
Arasumpett	do...	27th April ,,	Do. do...	2	Do.	First Prisioner to pay a fine of Rupees 12 and in default seven days' simple imprisonment, second prisoner released.	.....	Peon Yethirajooloo.	
Malayalamalay	do...	18th do. ,,	Do. do...	1	Do.	Dismissed.	.....	Overseer.	
Ammerdy	do...	3rd Jan. 1869.	Stealing Timber, etc., Sec. 379, I. P. C.	4	Do.	Dismissed ; but timber confiscated.	.....	Do.	
Appoocul	do...	10th Aug. 1868.	Do. do...	2	Do.	First Prisoner three days' imprisonment and second Prisoner released.	.....	Do.	
Vellacal	do...	19th do. ,,	Do. do...	3	Do.	Each three days' imprisonment.	.....	Do.	
Maliumpett	do...	17th Dec. ,,	Do. do...	8	Do.	Each ten do.	.....	Do.	
Do.	do...	Do.	Do. do...	2	Do.	Each three do.	.....	Do.	

Register of the Forest offences tried before the several Magistrates in the North Arcot Range for the year 1868-69.

Place where, and date when offence was committed.			Offence.	No. of porsons charged.	By whom tried.	Result and Punishment, if convicted.	Remarks, if any, recorded by trying Officer as to conduct of Department.	Informer.	Remarks of Forest Officer.
Arasumpett	Talook.	26th July 1868.	Stealing Timber, etc., Sec. 379, I. P. C.	1	Sub-Magistrate.	One day's imprisonment	.....	Overseer.	
Poodoor	do...	2nd Jan. 1869.	Do. Bamboos do...	4	Do.	First Prisoner five days' imprisonment and the others released.			
Maliumpett	do...	4th Feb. ,,	Burning Charcoal do.	2	Do.	Each 10 Rupees' fine or seven days' imprisonment.	.....	Do.	
Vellore	do...	30th April 1868.	Forgery	1	Do. and Committed to SessionCourt.	Two years' rigorous imprisonment.	.....	Do.	
Thumbacand	do...	Do.	Theft of timber Sec. 379 I. P. C.	1	Sub-Magistrate.	Released for want of evidence.	.....	Peon Fukruddin.	
Gungavarum	do...	10th Dec. ,,	Do. do...	1	Do.	Do. do.	.....	Do.	
							.....	Do.	

(Signed) H. H. YARDE,

Assistant Conservator of Forests,
Cuddapah and North Arcot.

C.

Statement showing the Free Passes issued during the year 1868-69 *for agricultural and house building purposes in the North Arcot District Forests.*

Range.	Number of Free Passes.	Number of bandy loads of jungle wood.	Number of bandy loads of bamboos.	Remarks.
North Arcot.....	63	101	129	

(Signed) H. H. YARDE,
Assistant Conservator of Forests,
Cuddapah and North Arcot.

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APPENDIX E.

SALEM AND SOUTH ARCOT FORESTS,
DEPUTY CONSERVATOR'S OFFICE, SALEM,
5th April 1869.

From

Lieutenant C. J. WALKER,

Deputy Conservator of Forests, Salem and South Arcot.

To

Major R. H. BEDDOME,

Officiating Conservator of Forests.

SIR,—I HAVE the honour to submit the annual Administration Report of the forests under my charge for the past official year.

The revenue amounts to Rupees 70,041-12-6, (Rupees 66,820-7-4 Salem, and Rupees 3,221-5-2. South Arcot) and expenditure to Rupees 31,609-14-4 (Rupees 28,420-2-11, Salem, and Rupees 3,189-11-5 South Arcot).

Timber in store is valued at Rupees 7,804-10-1, showing a decrease of Rupees 1,481-2-4 in comparison with the stock exhibited in last year's Report. The balance in favor of Government is thus Rupees 36,950-11-10 for the two Districts, viz :—

Rupees 36,869-6-11 for Salem and Rupees 81-4-11 for South Arcot.

Much of the expenditure may again be classed as extraordinary, and will not recur, for instance: Forest Roads Rupees, 2,945-7-11 ; formation of Timber yards ; Rs. 435-12-6 ; purchase of tools, etc., Rupess 637-14-5 and enclosing Railway firewood reserves, Rupees 2,825-12-5; making a total of Rupees 6,844-15-3 which forms no part of the ordinary working charges in the separate statement of financial results of each forest, the pay of the Deputy Conservator for ten months; Head-quarter office Establishment and office contingencies, have been divided amongst the three Ranges in the Salem District, pay of the Deputy Conservator for two months, drawn from South Arcot Treasury and office contingencies for that district are debited against that range which pays no share of the Head-quarter office Establishment.

Salem Forests

Introductory remarks mentioning the name of the officer in charge, etc.

Fourth Class Overseer P. Rangiah Naidu has been in charge of the Range and Head-quarter office throughout the year and has given every satifaction. He was transferred from South Arcot at the commencement of the official year owing to his greater knowledge and aptitude in accounts than the Temporary Overseer K. Ramier, and the careful and accurate manner in which the accounts have been kept and submitted is mainly due to his exertions and knowledge. The revenue of the Range has again risen, and the duties are daily becoming more arduous.

Measures taken for extending improving or protecting the forests, etc.

2. The number of Sandal-wood trees on the Kollimalays cleared of creepers is shewn in Statement A. A forest chart of these hills is in prepartion and will, I hope, be finished in time to accompany this report. Firewood Reserve A. near Sheveroy Hill Station has been extended so as to include the slopes of some spurs of the Sheveroy Hills. Nurseries have been formed in or near each Reserve, whence young plants will be planted out in places where the jungle is thin, seed should also be sown in pits or trenches at the commencement of the monsoon, several supply tracts have been laid off for the Railway consumption. The settlement of boundaries on the Colroy Hills is still delayed pending result of the suit instituted by the Poligar's Contractor.

Quantity of timber felled and stored in depots, etc.

3. 208 Maunds 10½ lbs. of Sandal-wood billets and roots were felled, prepared and stored in the Salem depot.

Elephants and other cattle and carts in the forests, etc.

4. Carting, etc., is still executed on Contract ; the high rates demanded and great competition may necessitate the purchse of a few carts and bullocks for Department operations, should the slopes

of the Colroys be decided to be Government property, which will at once place a supply of timber at disposal, and put a stop in a great measure to the market being over supplied by the renters of the Poligar's forests.

Timber, firewood, bamboos, and charcoal, etc., removed by wood-cutters, etc.

5. Statement B. exhibits the quantity of timber, etc., removed from the forests on licence.

Fire-wood and charcoal are removed on contract from tracts laid off by the Department, but there is no monopoly, the purchasers of contracts being bound to issue passes to all applicants on payment of the Government rates of seigniorage. The quantities removed on free pass are shown in Statement C.

Number and amount of confiscated logs, etc.

6. Quantity of timber, etc., confiscated and sold is shown in Statement D. This shows a marked decrease in comparison with last year, and includes some large items on account of fire-wood felled by the Railway Contractors outside of the tracts laid off for supply, and confiscated on that account.

Clandestine felling has I think decreased.

Timber of all descriptions sold to merchants from Government depots, etc.

7. 208 maunds, 10½ lbs. of Sandal-wood billets and roots were sold from Salem depot at an average rate of Rupees 2-14-0 per maund.

Timber supplied to Public Departments, etc.

8. No timber has been indented for or supplied to Public Departments. I have called the attention of the Superintending Engineer to this subject as we can now supply at several places, and when the Salem timber yard is opened (a supply of timber is now being felled) will always have a quantity of logs on hand. I trust the Department Public Works will then cease to obtain all their timber from other sources at enhanced rates, many of the timbers of the district are equal to Teak for house building purposes and can be supplied at half or one-third the cost. The Railway Locomotive Department has been supplied with 5,533, tons and 1,380 lbs. of firewood on which a seigniorage of Rupees 6,028-5-9 has been realized.

Outstanding advances enumerated, etc.

9. Outstandings only amount to Rupees 283-5-4.

Plantations.

10. A few acres in plantation No. 1. (Mullapuram) were again sown broad cast with Babool, and the young trees are doing better this year : those planted out from nursery are doing fairly, though the utter failure of the north-eastern monsoon has done much damage. The experiment of sowing with the castor oil plant, (*Ricinus Communis*) referred to in my last year's report was not made owing to the early advent of the south-western monsoon, which made me deem it unnecessary ; it should, I think, be tried this year. A quantity of Babool sown out in trenches in Reserves germinated well, and is progressing favourably, but the want of rain for the last two months has rendered it necessary to water it a little which will of course never pay on a larger scale.

In Plantation No. II. (Sheveroy Hills) 28,700 pits were dug, 28¾ acres of fresh jungle cleared ; and the whole Plantation *four* times cleared and weeded. Of the trees planted out in 1867-68, the Toon (*Cedrela Toona*) continue to flourish best, some of those first planted and now only one year old, having attained a height of ten feet, some of the Teak trees are doing fairly, but the majority do not progress and the *Pinnus Martima* evidently require a more sandy soil. These last look healthy, but do not grow, none being over a foot high, and the average not six inches. During the past year only some 14,000, trees have been put out (there is a slight discrepancy in the counting which prevents my stating the exact number) and of the total number put out since the commencenment, I estimate that some 4,000 or about 20 per cent. have died. Drought and particularly the failure of the rains when expected is the chief cause, and a species of borer which attacked the young trees in June did much damage, but, in many cases, I attribute the loss to want of supervision, and careless planting by untrained hands. I have particularly explained this to the maistry and have no doubt the per centage of loss will decrease as our

employees gain experience ; it is exceedingly difficult to obtain steady men of the gardner class which : is what we require it would seem very desirable to establish training schools and attach one or two "*pupils*" to each plantation to learn the work ; a monthly payment of Rupees 8 on the hills, and Rupees 5 on the plains would, I think, suffice during the time they were thus qualifying for maistry's posts.

Of the trees planted out the majority are Toon. Of the Teak and *Eucalypti* seeds supplied only a few germinated, the Belgam Walnut trees (*Aleurites Priloba*) are doing very well, and some which were supplied to the Collector are, I am informed by that officer, also flourishing. A few Jack (*Artocarpus Integrifolia*) Vel Valum (*Acaoia Lencophlea*) and Neem (*Azadirachta Indica*) have also been tried experimentally and are doing well.

I was disappointed in not receiving a large supply of Australian seeds applied for ; had I done so, a large number would now be ready in the nurseries for planting out in the end of May. The E. Globulous does best on these hills though the Iron bark might also succeed with care. There are some of the former in Major Hunter's garden which have been planted about four years, measuring at least twenty-five feet high and one foot in diameter. Seed should be put down in January, and the young trees put out in May and June when no further watering or care will be required. The Chinchona seed which I reported in my last had been given to a coffee planter for experimental planting, did not germinate, but I fancy some mistake must have been made in sowing, or sufficient care not taken in watering. The jalap (*Exogonium Purga*) grows well but does not appear to form bulbs. Had I remained in the district I proposed continuing this and other experiments which appear both useful and instructive. The plantation on the Sheveroy Hills is on the whole a success and will, I trust, prove very valuable : it should be largely extended, and arrangements made to ensure constant and effective supervision which would well repay the expense : the employment of a resident Overseer on an adequate salary is very desirable.

Forest Products.

11. The seignorage levied on the bark of the *Cassia Auriculta* has been discontinued in accordance with the Collector's wishes. The Kupili Podi (*Rottlera Tinctoria*) in Government Forests is being collected, but Government have deprecated its direct supply by the department to the chemists, (G. O. No., 3,169, dated 19th December 1868,) it will therefore be sold by public auction. A large and legitimate revenue is derivable from Forest products such as tamarind, galf-nuts, etc., some of which are now collected indiscriminately, and others leased out by the Land Revenue Officers, the proceeds being credited to Forest Revenue : both these systems are, I submit, bad ; the former satisfies no one ; least of all the hill men whom it was intended to benefit, and causes great damage to the trees, and the latter does not work well as the Land Revenue Officers and subordinates are not likely to take much interest in, or endeavour to increase, a source of Revenue which only swells the Budget of another branch. I think the subject one of the greatest importance as the revenue from this source alone would, if properly worked up, suffice to pay all our establishments, leaving us free to conserve timber, sandal-wood, etc., which is too often felled and sales pressed to enable the Forest Officer to show a surplus, or at least no deficit in his Budget. These remarks apply to all the Ranges under my charge.

Trespasses or damages committed in forest, etc.

12. An Abstract of Quarterly Returns of forest offences is given in Statement E. I have as a rule refrained from instituting criminal prosecutions in this Range, as there is no Forest Law, and in some cases our right to demand a pass or seize timber, etc., under any circumstances has been questioned. The whole subject requires careful and separate consideration. Several trespasses both by men and cattle have taken place in firewood reserves ; regarding the law in these cases also there is much doubt and uncertainty.

Health of the Forest Establishment.

13. The establishments have as a rule been healthy, save on the Sheveroy Hills where one peon after another has succumbed to fever, which I am at a loss to account for as they are well

clothed and housed, the fact remains that those hills are more unpopular amongst our peons, and apparently the climate is more trying, than any others in these districts, but I fancy the duties on other hill Ranges are often not performed, the peons remaining below, which cannot well be done with impunity on the Shevaroys which are more public and civilised. A system of duty rolls has been introduced by which each man's *daily* duty and places to be visited are detailed, and the Pygusts or Duffadars enabled to check them at any time during the month, so that no "shirking" ought to be possible.

Any valuable new or rare plants discovered, etc.

14. None.

Summary operations.

15. Operations in both districts will be summarized at the end of the Report. In the Salem Range, the improvement of the contract system for supply of firewood and charcoal. Sandal-wood operations on the Kollamallays, the settlement of boundaries on the Colroys. Introduction and extension of Plantations and Departmental working of all timber and bamboo tracts, and the careful reserving of firewood jungles for the Railway and Local supply have received and still require most attention.

Introductory remarks, mentioning the name of the officer in charge, etc.

Tripatur Forests. Mr. Franklin was appointed on probation on the 1st April 1868, and has remained in charge throughout the year, joining without any experience or knowledge either theoretical or practical he has done exceedingly well, and I had great pleasure in confirming him as third class Overseer, after a probation of six months. A little more attention to detail in the submission of returns, and a practical knowledge of his work which he is rapidly acquiring from experience, are all that is required to make him a valuable Range officer, his education and attainments being much above the common, and his attention to and interest in his duties all that could be wished.

Measures taken for extending, improving or protecting the forests, etc.

2. After repeated delays on the part of the Land Revenue Department, I was at last enabled to visit the Yellagiri and Jevadi Hills with the Acting Head Assistant. The Reserve on the former was approved of with a few trifling alterations in the boundary line another selected, and a preleminary demarcation line run, and my proposals for the formation of Reserves elsewhere generally approved of. To carry out the detail of such schemes requires months not days, and, as it is considered inadvisable that we should do this alone after the general outline had been fixed, I would suggest that a special officer of the Land Revenue Department be deputed for the duty to be accompanied by the Forest Overseer or, whenever possible, and necessary by the Deputy Conservator himself, objections, etc. can then be heard and disposed of at once, and whilst the preliminary demarcation is in progress. I do not think that maps referred to in G. O. No. 814, dated 23rd March 1869, in connection with the application for a special Demarcation establishment will do away the necessity of a special demarcation and survey of Reserved Forests, the more so as the Survey Department did not extend their operations to Hills or forest and jungle lands. They will however be of use in determining the situation, etc. of surrounding villages. The number of Sandal-wood trees cleared of creepers is shown in Statement A.

The enclosing of two reserved tracts (firewood) has been completed and another selected near Tripatur, felling is strictly confined to tracts given over for supply.

Quantity of timber felled and stored in depots, etc.

3. 524 Maunds 12 lbs. of Sandal-wood were felled, prepared and stored in depots during the year.

1374-3 cubic feet of timber were felled squared and dragged or carted to the timber yards at Tripatur and Singarapella; 1,309-0-9 cubic feet remain in the Forest ready for removal. The timber reported last year as about to be stored in Karoor was sold in the forest and amount realised credited under head I. the amount demanded for carriage being exhorbitant.

Elephants and other cattle and carts in the forests, etc.,

4. All work is now executed on contract except the Sandal-wood felling which is conducted by the Department direct. A few carts will be required when the close system is thoroughly introduced in order to reduce the excessive rates at present demanded.

Timber, firewood, bamboos and Charcoal etc., removed by wood-cutters etc.,

5. The quantity of timber, etc. removed from the forests on License is shown in Statement B. The unreserved classes only are felled on payment of seignorage. Firewood and charcoal are supplied on contract as in the Salem Range. Statement C. exhibits quantity and description removed on free pass by ryots, etc.

Number and amount of confiscated logs, etc.,

6. Statement D. exhibits the quantity of timber, etc. confiscated and sold, and amount realised. This contrasts very favourably with last year's return, and I think we may really ascribe the improvement to increased vigilance on the part of the overseer and his subordinates, the release of many of the peons from their Tannah stations by the introduction of the contract system for firewood, etc. has also doubtless had a beneficial effect. Now that the North Arcot jungles in Goreathum near Amboor are handed over to this Department (*Vide* G. O. No. 2,909, dated 20th November 1868. I hope to see smuggling reduced to a minimum. The establishment, however, is *inadequate*.

Timber of all descriptions sold to merchants from Government depots, etc.

7. 483 Maunds 14 lbs. of Sandal-wood were sold to merchants realizing Rupees 1,629-4-0 which was favorable, the average rate for billets being Rupees 4; 1,939-86 cubic feet of timber were sold from the timber yards at remunerative rates.

201 Maunds 16 lbs. of Sandal-wood and 2466-4-4 cublic feet of timber valued at Rupees 2,456-15-9 in all remain in the depots and timber yards.

Timber supplied to Public Departments, etc.

8. No timber was supplied to Public Departments the remarks already made on this subject with regard to Salem Range apply equally here. The Railway Locomotive Department have been supplied with 4,389 tons and 1,328 lbs. of firewood on which a seignorage of Rupees 5,105-13-2 has been collected, the demand from this source increases, but I am glad to hear that the Company have obtained a lease, or contract for wood from Kungoondy Zemindary, which will reduce the demand from Government jungles and give our reserves time to recover.

Outstanding advances enumerated, etc.

9. Out-standings amount only to Rupees 304 which is very creditable to the Overseer and even of this small sum Rupees 30-4-0 is on account of two gates supplied to the South Arcot Range in March, the account for which could not be adjusted before the close of the official year. Rupees 318 due by the late Overseer Mr. Hodgson on account of cash chest robbery has been recovered in full by monthly instalments.

Plantations.

10. No plantations have been formed in this Range, two pieces of land adjoining the D. and E. reserves have, however, just been taken up for the formation of nurseries, great delay occurs now in obtaining such pieces of land : all sorts of frivolous objections being made by the neighbouring ryots. The last piece handed over in the Kistnaghrerry Talook is so hampered with conditions, that I was doubtful whether we should take possession at all, and merely decided on doing so as it was the only good site available near the D. Reserve tract. There is apparently much petty jealousy in this respect, and if villagers find that all sorts of complaints and objections are entertained they are naturally encouraged to prefer them. It would appear to be all but impossible to convince the Divisional Officers, and therefore the people themselves that we have no wish to interfer with the powers or priveleges of either, and have the welfare and interests of the latter as much at heart as any of the former. Some of the Sandal-wood seed put down on the Yellagiri has germinated. I think a small experimental plantation might be formed on that hill, if a favorable site can be obtained.

11. Some 400 lbs. of Kupli Poddi has been collected by the Department on the Jevadi hills and will be removed to Tripatur and sold. A very large Revenue is obtainable in this Range from forest products ; I found that many tamarind trees near Cotaputty were not rented out at all. This has now been done by the land Revenue Officer but the present system is unsatisfactory for the reasons stated under Salem Range. When the forests are divided in to reserved and unreserved we shall collect the products in the former but should also, I think, be entrusted with the management of their collection in the latter, subject, of course, to the Collector's wishes as to what should be sold and what collected free by the villagers.

Forest products.

12. Statement E. exhibits, in an abstract form, the result of criminal prosecutions which has on the whole been favourable. Smuggling has, I think, much decreased since the present Overseer took charge, and the peons been released from most of their Tannah duties and enabled to range round the forests. It is still however prevalent near Vaniembady and Allengoyem, large quantities of bamboos and saplings reaching the Bangalore market from the former place, of which we have no account. I trust however that now that the jungles on the North Arcot frontier are placed under Departmental management, some check may be obtained. I have also addressed the Conservator of Mysore Forests on the subject, as he may be able to check the import at Bangalore.

Trespasses or damages committed in forests, etc

13. Fever has been prevalent throughout this Range. The Overseer has enjoyed good health ; but all the subordinates have suffered more or less.

Health of the Forest Establishment, etc.

14. No new plants have been discovered.

Any valuable new or rare plants discovered, etc.

15. *Extention of firewood Reserves for the Railway.*—Selection of Reserved forests, and the more general introduction of departmental working in lieu of the License and Voucher system have been and will continue to be the subject most requiring attention. The contract system for fire-wood and charcoal worked well in this Range.

Summary of operations.

Denkenekotta Forests.—These forests have remained in charge of first class Overseer Mahomedally Sahib whose duties have been as usual, performed entirely to my satisfaction and his own credit.

Introductory remarks mentioning the name of the officer in charge, etc.

2. Owing to want of funds no progress has been made on the forest road No. I.—beyond Cundacotta it will now be completed by the Department as far as Sevenhully which will suffice for our purposes. The portion completed (eight miles) has been maintained by the Department Public Works from forest funds placed at the disposal of the Range officer. Road No. II. having been partially completed operations were suspended and the balance of allotment expended on road No. III. which has been finished as far as the Chenar river. This last was more urgently required in order that we might remove a large stock of timber stored on the banks of that river which has now been done. The gradients on both these roads are still very steep but to reduce them would cost a larger sum than we could afford. Road No. II. will be completed under the arrangements authorised in G. O. No. 778, dated 20th March 1869.

Measures taken for extending improving or protecting the forests, etc.

The number of Sandal and other trees cleared of creepers is shown in statement A.

The preliminary demarcation of Reserved Forest in this Range is to be at once commenced having hitherto been delayed on account of the dryness of the season. Employment of the Land Revenue officers on other duties which prevented their attendance, etc.

3. 4190-5-3 cubic feet of timber were felled, squared and stored in the timber yard at Denkenekotta and Penagra ; 1287 17½ lbs. maunds of Sandal-wood were felled, prepared and lodged in the central and Forest depots.

Quantity of timber felled, and stored in depots, etc.

Elephants and other cattle and carts in the forests, etc.,

4. Carriage is difficult to obtain and rates high four strong carts have been constructed by the Overseer, at a cost of Rs. 45-5-4 each, which is moderate and a four wheeled waggon or cart was supplied by the Department Public Works at Salem at a cost of Rupees 80 ; a sling cart is being made up at Tripatur for use in this Range which will I think prove most useful. The purchase of six or eight pairs of buffaloes was authorised but owing to non-completion of the road mentioned above they were not bought, it will be advisable to procure them or bullocks at once, as their employment will tend to reduce rates and there is ample work for them in dragging logs from the forests.

Timber, firewood, bamboos and charcoal, etc., removed by wood cutters, etc.

5. The quantity of timber, etc., removed on license is Shown in statement B. The receipts from this source amount to Rupees 2,257-15-9, derived principally from bamboos, firewood and charcoal, the two last are supplied on contract and some difficulty has been experienced in collecting the arrears of revenue from this source both in this Range and elsewhere, owing to the sudden refusal of the district Collector to enforce the provisions of Act No. II. of 1864, in such cases. It is clearly a Government Revenue and puttahs are issued in prescribed from and I fail therefore to see the force of the objection raised, Section 52 of the Act being apparently framed expressly to meet such cases.

Statement C. exhibits quantity of timber, etc., given free to ryots and villagers. Free passes are now issued by Tahsildars and Deputy Tahsildars and in future our Department is to have nothing to do with this matter. The Collector is of opinion that the land Revenue officers are better aware of the wants and requirements of the people than the Overseers and subordinates of the Special Department. I regret that I cannot agree in this opinion, experience teaches me that the Tahsildars know and care nothing about it, nor can they spare time from their other duties to give applications the consideration they demand, it is to be feared therefore, that excessive quantities will be applied for and granted unless some efficient check is instituted. The idea that no damage will be done if these passes be given without check, and in an unsystematic manner is I submit a mistake ; the best plan is doubtless to lay off tracts for free felling to each village, but this plan is difficult to carry out—the matter requires attention.

Number and amount of confiscated logs, etc.

6. The quantity of timber confiscated and sold as shown in Statement D. is slightly in excess of last year, in some cases in which junglewood props were brought on firewood passes, the Joint Magistrate refused to convict as the definition of firewood was vague and no *dishonest intention* could be proved : the wood was consequently released though there is little *moral* doubt that the parties knew they were not authorised to bring it on firewood passes. Clandestine felling rarely occars.

Timber of all descriptions sold to merchants from Government depots, etc.

7. 1717 Maunds of Sandal-wood were sold to merchants also 4,438-6-9 cubic feet of Atchar and other timbers, and 103,810 bamboos (4,410 Vallays, 99,400 bamboos) the rates realised being very remunerative. Maunds 750—23 lbs. of Sandal-wood 3,544-1-3 cubic feet of timber, and 40 vully bamboos valued at Rupees 5,223-7-2 remain to be accounted for.

Timber supplied to Public Departments, etc.

8. 291-3-8 cubic feet of timber were supplied to the Remount depot and 288-6-7 cubic feet to the Department Public Works (at cost price on account of Forest Road No. II) and the amounts adjusted by voucher in the monthly accounts. A large quantity of timber was also taken by the Department Public Works from the Denkenekotta yard. The Public Departments in this Range are therefore begining to see the advantage of using Government Timber instead of that obtainable from merchants.

Outstanding advances enumerated, etc.

9. Outstandings amount to Rupees 195-4-6 the principal item being only one petty advance to Poojaries for Sandal-wood cutting, etc.

Plantations.

10. No plantation has yet been formed. On the Officiating Conservators visiting the Range in June, a piece of land near the town of Denkenekotta was selected for this purpose but was refused on application to the Divisiona Officer on the plea that it had formerly been a village site, and that the people represented that they were going to build there again: if this were the case the decision would of course be insurmountable, but I cannot help thinking the objection on the part of the villagers is fractious and have caused enquiry to be made whether any real intention to rebuild exists. If not, I hope the Divisional Officer may be induced to reconsider the matter, and at least refer it to the Board of Revenue. The site was deserted years ago and there is no other available for our purpose though a great part of the town of Denkenekotta is in ruins, and numbers of building sites available there.

Forest products.

11. 21 lbs. of Kupeli Poddi have been collected; as in the Tripatur Range, the forest products of these forests such as the fruits of tamarinds, poonjamarum would more than suffice to pay all our establishments and working charges if properly managed, and at the same time afford a means of livelihood to the Poojaries (Hillmen) in the months when no Sandal-wood operations were being carried on.

Trespassess or damages committed in forests, etc.

12. Constant efforts are made to stop the damage done to Sandal-wood trees by cattle drivers and others, but this will never be effectually done till we can exclude men and cattle altogether. A difficulty presents itself in doing this, as Sandal-wood grows in patches and is so scattered that it would be scarcely fair to include whole tracts in a reserve and to demarcate each clump would be impossible.

Criminal prosecutions have as a whole resulted favourably. Two village Curnums were fined Rupees 200 each or in default thirty days imprisonment for allowing valuable forest land to be cleared without reference to the Divisional Officer or this Department.

Health of the forest establishment, etc.

13. The establishment has suffered considerably from fever. There was one casualty amongst the peons owing to an accidental explosion of gunpowder with which he was playing.

Any valuable new or rare plants discovered, etc.

14. No new plants have been discovered. The specimens of timber alluded to in my last years report are being prepared.

Summary of operations.

15. This Range is now worked entirely on the close system, timber being felled on licence for local purposes only in remote forests the completion of road No. 3 from Penagra to Chenar will enable us to supply a large quantity of first class timber such as Atchar (*Hardwickea Binata*) Muddi (*Terminalia Tomentosa*) and Vahgai (*Acacia Speciosa*) and when road No. I. is completed to Sevenhully as sanctioned, new tracts will be opened out for the supply of our Denkenekotta timber yard. The prospects of the range are highly satisfactory.

South Arcot Forests.

Introductory remarks mentioning the name of the officer in charge, &c.

Temporary Overseer (4th Class) K. Ramiah has been in charge throughout the year, having been transferred from Salem Range. He has worked well and the results are favorable considering the extent of his Range and the limited numbers of his establishment.

Measures taken for extending, improving or protecting the forests, etc.

2. The License system has been abandoned in the Trinomalay Talook except for unreserved timbers and in special cases. There is however a disinclination to purchase from our depot at Chengum, which is generally the case at first, and I find that parties are resorting to North Arcot for their timber where they fell on License. This has caused the revenue to fall short of the estimate by Rupees 1,728-15-8. I am not sorry that the demand is slack as the forests need time to recover from the the promiscuous felling of former years. Better arrangements are however

necessary with the North Arcot establishments and Talook Officers to prevent felling in the South Arcot Forests on Licenses issued in North Arcot—and obtaining Licences for what are in South Arcot reserved woods. I have been in communication with Mr. Yarde on the subject. A portion of the Jevadi Hills should be included in this Forest Range as the Tripatur Range (Salem) is much too large for one Overseer, and timber, &c., from the Ten Mullay and other hills on the Jevadis must be removed via South Arcot. Two jungle blocks (fire wood) have been selected and should be enclosed as an experimental measure. The firewood jungles in this district particularly near the proposed line of Railway have been carefully inspected at the request of the Collector and a special report submitted. Much remains to be done in the matter of settling boundaries in the Kullacoorchy Talook. This has been delayed pending the result of the suit in a similar case now pending in Salem. This range does not receive the attention it requires, owing to constant, absence in the Salem District of the Deputy Conservator. If the Gingee jungles are placed under the department and large plantations formed for the growth of Casuarina, the employment of an Assistant or Sub-Assistant under the Deputy Conservator's orders seems highly advisable and would well repay the extra expence.

Quantity of timber felled and stored in depot, etc.

3. 1365-0-7 cubic feet of timber were felled, squared and stored in the Chengum depot. Carriage is cheap and easily obtainable.

Elephants and other cattle and carts in the forests, etc.

4. All work is executed on contract and there is no reason to change the system.

Timber, firewood, bamboos and charcoal, etc., removed by wood cutters, etc.

5. Statement B. exhibits the quantity of timber, etc., removed from the Forests on License. Charcoal has, with the concurrence of the Collector, been leased out for the current year 1869-70, as an experimental measure.

Statement C. shews quantity of timber, etc., removed on free passes which, as in Salem, will in future be issued by the Land Revenue Department only, the Forest Department checking the felling and reporting any excess or irregularity but not otherwise interfering with free felling ; this I think is a step in the right direction.

Number and amount of confiscated logs, etc.

6. The number of confiscated logs, etc., is shewn in Statement D. with the amount realised by sale. The rules are still often evaded, but clandestine felling is detected much more frequently than formerly.

Timber of all descriptions sold to merchants from Government depots, etc.

7. 1332-7-5 cubic feet of timber have been sold to merchants, realising Rupees 757-9-0 the rates which have been reduced during the year are low but remunerative in proportion to those paid for felling, etc., 124-11-2 cubic feet remain in stock.

Timber supplied to Public Departments, etc.

8. No timber has been taken by Public Departments. I have called the Superintending Engineer's attention to the fact and trust that in future all timber required for Government purposes in the talooks under conservancy may be supplied from our depots. Rates, etc., have also been notified in the French Government Gazette in Pondicherry.

Outstanding advances enumerated, etc.

9. Outstandings only amount to Rupees 1-7-6 the main item being transfers unadjusted with the Salem Range.

Plantations.

10. No plantations have yet been formed and I can again say "I am glad of it considering the dryness of the season." A small experimental plantation at Chengum is very dasirable, but I am not sure if the land is quite suitable. The formation of a teak plantation on the Ten Mullay should I think be kept in view and extensive firewood planting in the Tindevanum and Villapuram Talooks for Railway requirements seems imperative.

Forest products.

11. With the exception of Tamarinds there are no Forest products deserving remark. The revenue to be derived from these should be worked up and credited to our Department.

Trespasses or damages committed in forests, etc.

12. The result of criminal prosecutions has been very satisfactory and much is due to the careful manner in which the Overseer prosecuted his cases. This is the most tiresome whilst one of the most important duties of a Range Overseer, the difficulty of procuring sufficient legal proof to secure a conviction being very great. Many Overseers fail to take sufficient trouble in the matter being disappointed at having cases in which there is no *moral* doubt, thrown out for want of evidence.

Health of the Forest Establishment, etc.

13. The establishment has enjoyed good health, with the exception of the Overseer who has lately been seriously ill and should have gone on leave but remained at his post as there was no one to relieve him. Some provision should I think be made in our arrangements and budgets for such cases. In the Department Public Works, I think I am correct in stating that there is an extra Overseer in each Range who fills any such temporary vacancy. The Tahsildars have now so many other duties to attend to and the work of a Forest Overseer has so much increased that thay cannot undertake it, or, if they do, can merely carry on routine correspondence, &c., which forms the smallest and least important part of the work.

Any valuable new or rare plants discovered, etc.

14. No new plants have been discovered.

Summary of operations.

15. A timber shed has been erected at Chengum and the yard fenced in all round; the old office has also been repaired, it was badly built at first owing to a mistaken idea of economy, and I had not then sufficient experience in such matters, it will not therefore I fear last more than another year or two, its original cost was Rupees 210-8-0 systematic felling and more accurate checking of Licenses have received attention, and Conservancy has been carried out as much as possible with our small Establishment. The firewood supply of the future demands much attention and the immediate introduction of a careful system of reserving and planting all available waste tracts. I have been repeatedly in consultation with the Collector on this subject. That officer is fully aware of the necessity which exists for prompt and adequate measures being adopted and I have received every assistance from him and divisional officer in this and all other matters in connection with the Department, though the latter shares with many other doubts as to the legality of our position, it is most important that these should be set at rest, and our powers and rules settled and confirmed by legal enactment.

General summary of operations, etc.

16. In summarising operations in these districts, which I am about to leave, I may be allowed to allude briefly to what has been done since I assumed charge four years ago.

17. The revenue for both districts has risen from Rs. 44,502-1-4* at which it stood for 1864-65 to Rupees 70,041-12-6† in 1868-69 and this increase has been effected whilst all felling has been limited to the bare requirements of the local markets. I do not consider a good revenue a "sine qua non" in fact regard it as entirely a secondary consideration, but it is of course desirable, if realised by legitimate means, and not by trenching on the yield of the forest, the main increase has been effected in Forest products and the introduction of a better system for the supply of firewood and charcoal to the Locomotive Department and the Public. The expenditure has also increased owing to the higher pay of the officer in charge, formation of plantations, and reserves, forest roads and timber depots, all which are matters of primary importance.

In 1864-65.

	Rs.	A.	P.
* Salem	40,306	6	4
South Arcot ...	4,195	11	0
	45,502	1	5

In 1868-69.

	Rs.	A.	P.
† Salem... ...	66,820	7	4
South Arcot...	3,221	5	2
	70,041	12	6

18. Reserved tracts have been enclosed in the Salem District and two plantations formed, that on the Shevaroy Hills having in particular proved successful. Departmental working has been

almost altogether substituted for the Voucher and License system which is now merely retained for the timbers of the unreserved classes.

19. The Denkenekotta Range has been surveyed and mapped and three Forest Roads constructed; all the hill ranges of the district have repeatedly been visited and explored.

20. In South Arcot also the departmental system has been introduced and the subject of firewood reserves carefully considered.

21. The establishments of both districts have been remodelled although their pay and numbers are still notoriously inadequate, and present in fact a premium on dishonesty. A system of direct and as far as possible accurate supervision of every peon and watcher (by means of duty rolls) has been introduced and License Registers enable us to check and recover each pass or permit issued. The facilities for free felling for agricultural purposes, &c., have also been largely increased which will be seen by a reference to Statement C. The greatest attention has been paid to the prescriptive and communal rights of the villagers, and I am certain that in no case have these suffered intentional wrong or hardship at the hands of the Departmental Overseers or myself. The Department is naturally often viewed with suspicion and distrust by the people with whose customs it must necessarily sometimes clash, and it is one of the most disappointing things which a Forest officer has to encounter, that, do what he will for and with the people and the divisional officers his wishes and acts are apt to be, and often are misconstrued, and he is supposed to be endeavouring to interfere with the people's rights, on the divisional officers' authority. A little reflection and experience will I trust prove that neither result would be to our interest or in accordance with our wishes. I can answer for my own endeavours and inclinations, and I have never found our overseers at all disposed to interfere with, or annoy the people although in some cases they err from ignorance of their ways and wishes—this refers mainly to Europeans whose employment except in charge of plantations and strictly reserved Forests where there are no villages is I consider open to many objections.

22. The demarcation of the Forests into Reserved and Unreserved—extensive planting and constant consideration and extension of firewood Reserves for the Locomotive Department and Local supply appear to me most important, and to do this carefully and thoroughly will in itself be work for the officer in charge for several years to come, let alone the extension of departmental working and systematic forest surveys.

23. When the forests are divided into classes to aid in which it would be highly advisable if an Assistant or Deputy Collector were specially nominated, I would strongly deprecate the institution of Separate Revenues Imperial and Local though many tracts might be placed directly under the divisional officers and their subordinates. Until the legal position and powers of the officers and servants of the department are fixed by law and the establishments placed on a proper footing both as regards pay and numbers, our efforts must to a great extent be nugatory; when this is done and the relative positions of the Forest officers and Collectors more clearly defined and settled. I can see no reason why the Departmental operations should not proceed without any clashing with other branches of the Revenue Department. It is the uncertainty and want of any definite or legal position which I consider is to blame in the majority of cases where this happens, and this want is, I think, felt more daily as one rises in the department and finds by experience how difficult it is even with the best intentions, to carry on work so as to please and give satisfaction when the whole position of the department and its officers is uncertain and ill-defined.

24. Financial Results, vide pages 8 and 21, paragraphs 58 and 156.

I have the honour to be, etc.

(Signed) C. J. WALKER, Lieutenant,
Deputy Conservator of Forests.

A.

Statement of Sandal and other trees cleared of creepers in the Salem Forests for the official year 1868-69.

Range.	Cleared by Peons.		Remarks.
	Sandal trees.	Trees of other description.	
Salem...	774	...	
Tripatur	1,356	...	
Denkenekotta	392	90	
Total...	2,522	90	

Dy. Conservator's Office,
Camp Salem,
5th May 1869.

(Signed) C. J. WALKER, Lieutenant,
Deputy Conservator of Forests,
Salem and South Arcot.

B.

Statement shewing quantity and description of timber, etc., removed from the South Arcot Forests on licenses and tickets during the official year 1868-69.

District.	Bandy loads.									Grand total of Bandy loads.	Head loads.							
	Timber.			Total of Bandy loads of timber.					Total of Bandy loads of firewood.		Timber.		Total Head loads of of Timber.	Bamboos, etc.			Total of Head loads of Bamboos, etc.	Grand total of Head loads.
	First Class.	Second Class.	Third Class.		Firewood.	Bamboos.	Bark.	Charcoal.			Junglewood.	Karoongli and Satin wood for ryots.		Bamboos.	Bark.	Charcoal.		
South Arcot... ...	...	...	139	139	1,096	1,275	196	73	2,640	2,779	384	577	961	5,127	...	1,571	6,698	7,659
Total...	...	...	139	139	1,096	1,275	196	73	2,640	2,779	384	577	961	5,127	...	1,571	6,698	7,659

Dy. Conservator's Office,
Camp Salem,
5th May 1869.

(Signed) C. J. WALKER, Lieutenant,
Deputy Conservator of Forests,
Salem and South Arcot.

C.

Approximate Statement of articles granted on Free passes to ryots for agricultural purposes and erection of villges or houses destroyed by fire, etc, during the year 1868-69.

District.	Bandy loads of jungle-wood.	Bandy loads of moongils.	Bandy loads of split moongils.	Bandy loads of firewood.	Head loads of moongils	Head loads of split moongils	Remarks.
South Arcot	632	117	73	65	18	15	

Dy. Conservator's Office,
Camp Salem,
5th May 1869.

(Signed) C. J. WALKER, Lieutenant,
Deputy Conservator of Forests,
Salem and South Arcot.

D.

Abstract of the Statement of timber, etc., confiscated and sold in South Arcot District during the year 1868-69.

Description.	Number of Bandy loads.	Number of Head loads.	Amount realised.	Amount credited.	Amount distributed as rewards.	Remarks.
			RS. A. P.	RS. A. P.	RS. A. P.	
First Class Atcha Vengay, etc.....	5¾	22	62 4 0	54 10 0	7 10 0	
Second Class Namay, etc.....	4	4½	28 6 0	23 3 0	5 3 0	
Third Class Jungle wood	3	11½	6 3 6	4 5 4	1 14 2	
Firewood.....	48¼	...	27 13 0	27 11 10	0 1 2	
Bamboos.....	5½	11	25 1 6	17 1 6	8 0 0	
Split Bamboos	1½	...	5 4 6	3 4 6	2 0 0	
Avarum bark.....	2¼	...	14 0 1	9 2 1	4 14 0	
Charcoal.....	...	55	4 4 9	2 11 3	1 9 6	
Velam bark	...	1	0 1 0	0 0 8	0 0 4	
Total...	70¼	105	173 6 4	142 2 2	31 4 2	

Dy. Conservator's Office,
Camp Salem,
5th May 1869.

(Signed) C. J. WALKER, Lieutenant,
Deputy Conservator of Forests,
Salem and South Arcot.

REPORT ON THE FIREWOOD JUNGLES IN THE SOUTH ARCOT DISTRICT, AND PROPOSALS FOR THE FORMATION OF RESERVED BLOCKS, PLANTATIONS, ETC., CALLED FOR BY THE BOARD OF REVENUE AND COLLECTOR OF SOUTH ARCOT.

1. *Trinamalay Talook.*—Suitable tracts for reserve are frequently, in fact I may say generally obtainable, although the operations of the Iron Company have rendered fair sized wood (for fuel) rather scarce near the Cusbah itself (Trinamalay). It does not appear necessary, or advisable at present to do more than enclose and reserve, as a tentative measure, the two blocks, one near Poothoopoliem and one near Chinnasamudrum described in my last year's Report, No. 236, dated 20th February 1868, to the address of the Acting Head Assistant; the latter tract has since been seen and approved by the Collector. One or two more blocks might be taken up next year near Trinamalay, where from the reasons mentioned above there is now only scrub jungle which will take many years to recover and become useful.

2. GINGEE DIVISION.—*Tindivanum Talook.*—Although much and wasteful felling has been, and is carried on and I observe a marked difference ever since my inspection in January 1868, there is still a large supply available both for general and local purposes, and a sufficient number of trees of the better description, such as Karingali (*Acacia Sundra*). Vepum *Aza dirachta Indica,*) etc., to meet the local agricultural requirements, if measures are speedily adopted to restrict and systematize the felling. The prevailing tree is the Turunji or Wunjai (*Acacia Amara*) one of the best firewood trees on the eastern side of this Presidency. The jungle is for the most part situated to the west of the village of Gingee and south of the Trinamalay road at and around the village of Pettai. There is also a little to the north of the Trinamalay road known as the Kotamungulum jungle. I selected seven tracts for demarcation and reserve, including the two reported on last year and have, with the concurrence of the Divisional Officer, placed an establishment of a Maistery and two peons under the orders of the Deputy Tahsildar to carry out the preliminary demarcation by blazing the trees and cutting narrow boundary paths. The area of those blocks may be roughly stated at six square miles or nearly 3,000 cawnies and the cost of enclosing them with a three feet ditch, embankment, and aloe fence at Rupees 4,000. This should be merely regarded as a commencement, having in view the probability of the Railway extension through Tindivanum, whence a large demand may be anticipated; many other blocks are available without trenching unjustly on the supply, or grazing grounds, of the villagers. Meanwhile felling should, I think, be restricted to tracts marked off *for supply* and the Divisional Officer has promised to stay all handing over of jungle land for cultivation; there being an ample cleared area lying waste round each village. Collections under the Village Jungle Conservancy Rules amount to Rupees 3,054 for 1868, of which Rupees 1,948-7-0 is for firewood, equal to 6,235 bandy loads and Rupees 828 for jungle wood at Rupees 1 per load. The collections for 1867, just previous to my first report, amounted to Rupees 1,573-0-7 or about one half, there is no other jungle to speak of in the Talook.

3. *Villapuram Talook.*—There is some extent of firewood jungle in the north-western corner of the talook near the villages of Kanakancoopum, Mooloor, Arnapuram, etc., being in fact a portion of that known as the Gingee jungles, and those of the Votavellum Mootah in the Trinamalay Talook. This should receive attention in connection with the extension of reserved tracts in the Gingee jungles. I was glad to observe small topes of Babool (*Acacia Arabica*) frequent in this talook particularly near the Cusbah. The Tahsildar informed me that they were mostly formed by the people themselves some ten or twelve years ago; but that now the novelty appears to have worn off, and they paid little attention to, and did nothing to extend them, the fact being, I suppose, that grain cultivation is much more remunerative, at least more immediately so, and the ryot does not yet understand that, without wood, he will be unable to build his cottai, fence his field, or indeed make his plough, not to mention the value of the leaves as manure, and the pasture obtained owing to the shade under the trees. The Babool seems to have grown well, averaging some twenty feet in height and nine inches in diameter, at three feet from the ground. Notwithstanding the peculiarly dry season the trees are very healthy. They have not apparently

been thinned on any systematic plan, and consequently some patches are found almost bare, whilst others are so thickly covered with trees as almost to prevent entrance.

Much may be done in this talook in the way of planting, and as it is almost devoid of natural jungle and highly cultivated, much is required. I refer to the matter further on.

Collections under Jungle Conservancy for 1868, amounted to Rupees 1,633-6-0 representing 4,000 bandy loads of firewood, and 300 bandy loads of jungle Timber.

4. *Trikovilur Talook.*—Scrub jungle exists here near Yellavanasoor (formerly the Cusbah) and within five miles of Trikovilur (the present Cusbah), and I think some steps should be taken to reserve some for the local requirements. I have noted one or two eligible tracts although the Talook did not, properly speaking, fall within the limit of my enquiry, and is not under conservancy. No collections are, I am informed, by the Tahsildar, made under the local conservancy although there must be a considerable quantity of firewood cut for sale. Messrs Parry and Co. have a large Sugar Mill at Trivanullur where they obtain firewood at Annas 11 per candy, or about Rupees 1-6 per bandyload which, considering that the nearest jungle is at least 15 miles off, is very low. Topes are frequent, the prevailing tree being the Illuppi (*Bassia longifolia*) grown for the oil obtained from its fruit. There are many eligible localities for plantations of firewood and other trees.

5. *Kullakurchy Talook.*—The eastern and southern parts are devoid of firewood jungles, but the northerly and western portions or well wooded; the range of hills commonly called the "Colroyen Mullay" forming the boundary between this Talook and the Salem District. There is a very large local consumption of firewood in the preparation of sugar, the cane being largely cultivated. The forests and jungles of this Talook have been under the charge of the Special Department since 1864 but, as reported last year, it has been very much neglected owing to the claims of the Poligar's contractors to almost all the timber and firewood tracts, and we have only lately commenced gradually to enforce conservancy measures. The Government ryots in many cases have been in the habit of paying an annual sum to the Poligar's *contractors* for the right to collect thorns, leaves, etc., in the scrub jungles at the foot, or on the slopes, of the hills near their villages; I do not think that they are called upon to make any such payment, and the matter should, I think, have attention, I would not recommend any tracts being enclosed or reserved for the present, the supply is ample for all local purposes and there is little or no felling for trade.

6. *Avenues.*—Although not falling within the scope of this report, I may state that these are for the most part comparatively of recent formation except in the vicinity of Cuddalore itself. The prevailing trees are the Cassia and Tulip tree, but I was glad to see that Tamarinds were now being planted alternately with these. There can be little doubt that wherever it can be got to grow, the Tamarind is the best avenue tree we have, being highly ornamental, and the fruit bringing large revenue to the Local Funds; it is, however, of very slow growth. The plan of planting it alternately with the quick growing trees, such as those mentioned above, is unobjectionable as when it obtains some size, say twelve or fifteen years' old, they can be removed, and if felled gradually, and sold should go far to repay the original cost of planting. In some places the Department Public Works appear to have a liking for the *Acacia Farnesiana* (Vaday Vallai Muram) a worthless shrub affording no shade, the planting of which should, I think, be entirely stopped, and what there is gradually removed.

7. *General Remarks.*—The Governor of Pondicherry, with whom I had the honour of an interview, informs me that the firewood consumption of that town alone may be estimated at 120,000 cart loads per annum. I fancy, however, that the Pondicherry cart ("charrette") does not contain more than half the quantity sold as a load elsewhere. This leaves 60,000 or if we deduct 10,000 as received from other places 50,000 bandy loads; say 22,000 tons per annum supplied from the Jungles of Gingee and Villapuram. We see that the seignorage on this quantity as collected last year amounted to only Rupees 3,198-7-0 instead of Rupees 15,625 which it represents at Annas 5 per load, or making a further and liberal allowance for supplies drawn from private lands, etc., etc., it should

Comparison of receipts with actual supply.

certainly be not less than Rupees 10,000 irrespective of local wants, most of which are, of course, supplied by free felling.

Necessity of checking the felling.

8. It appears therefore, most important to systematize and limit the felling and, if found necessary on account of the Railway, to close those Jungles altogether so far as Pondicherry is concerned, which would necessitate the supply for that market being drawn from the more remote but more thickly wooded tracts in the Trinamalay Talook. I do not think that this is necessary at present and am sanguine that, if, all the available blocks, are enclosed, and judicious felling by rotation introduced, the demand, both for the Railway and Pondicherry, may be met, at least in a great degree, from the Gingee and Villapuram tracts until we can supplement the supply by extensive plantations ; the Railway taking the large wood, and the Pondicherry market the small, of which only a small quantity as "lighting wood" is required for the Locomotives.

Proposed mode of demarcating and enclosing the blocks.

9. In the formation of the proposed reserved blocks the greatest care must of course be taken to respect strictly the communal rights of the villagers. Each will be marked off by a small path, as already stated, and the proposed limits published in the *District Gazette*, and made generally known, and I agree with the Acting Head Assistant, that at least three months should be allowed from date of such publication for objections being made by those concerned. When the limits are finally fixed they should be enclosed by a three feet ditch, embankment and fence ; where paths are necessarily included, gates should be put up where they enter and leave the tract and every means adopted to exclude cattle and goats.

Rotation of tracts and establishments required

10. The tracts should then be opened in rotation for felling, when open at least four watchers will be required, viz, two for the gate to check the ingress and egress of bandies, and two patrolling the tract and regulating the felling when closed, one Watcher or Mistry will suffice for each, whose business it will be to prevent trespass, keep the fence, etc, in good order, and sow seed of quick growing trees in the thinner portions of the jungle ; a nursery being attached to each block as in the Salem District. All unenclosed jungle I would retain for the *free* use of the villagers, preventing any felling for sale except in the reserved blocks.

Unenclosed jungle to be kept for free felling by the villagers.

Supply tracts.

11. During the formation of the blocks, felling should be restricted to certain well defined places which will enable much scattered jungle unfit for reserve being made of use and give time to secure the better tracts. This is done in the Salem jungles (firewood) by fixing from time to time tracts "*for supply*" no grazing or other rights being interfered with.

Difficulty of finding compact blocks, owing to scattered cultivation.

12. The great difficulty in selecting tracts is to find compact blocks without any intervening cultivation, the ryot having here, as elsewhere, a predilection for the cultivation of *patches* of more or less extent in the middle of the jungle, which he clears for the purpose and pays the "*teerwah*" of the land for several years from the sale of the wood, after which he abandons the cultivation. This practice should at once be put a stop to. No jungle, and rarely even forest, can or should be allowed to stand against the gradual spread of regular cultivation, and even reserved limits might have eventually to be curtailed to make way for it, but the present system is productive only of loss by the clearing of trees or firewood, and often, I imagine, by the evasion of the Land Revenue from the cultivation being hidden or concealed.

Plantations proposed.

13. The supply from the natural jungles must however be supplemented by extensive planting, and luckily we have suitable localities available—waste land on the banks of the Gingee and Arioncoopum rivers, and of the numerous channels in the VillapuramTalook, might be covered with comparatively fast growing trees affording wood suitable for agricultural purposes and fuel. Amongst the first I would specify the Tulip tree, (*The spesia Populnea*) Babool (*Acacia*

For local purposes.

Arabica) Velvalum (*Acacia Lencophlea,*) and amongst the latter, besides the Babul which is equally valuable for firewood as for ploughshares and fencing, the Casuarina (*C. Equistafolia*) the Korakapilli (*Inga Dulcis*) and the Seemi Acti (*Cassia florida*) this last, miscalled here kone, (which is the *C. fistula*, also a quick growing tree, and furnishing a better wood, but I have never seen it except wild) is not liked by the people who say, with some truth ; that " it has no hears in it" the wood burning with little flame and emitting dense volumes of smoke : its growth it very rapid, even more so than the Babool, which, however, with the Tulip tree, are much preferred by the ryots for all purposes. But *the* site for plantation on a large scale is the " Multar," the abandoned channel of the Pooniar river which at and below Arasoor (4 miles east of Trivanellur) offers every advantage for Casuarina planting, large tracts being found with the water not nearer than 8 or 9 feet from the surface, the soil light and being that most suitable for the growth of the tree.

14. The Superintending Engineer informs me that there is another piece of smaller extent, suitable for planting near the Pooniar Anicut (4 miles east of Tricovilur) but the Range Officer (Captain Howard) seemed to think it was not available. The Villapuram Tahsildar informed me that the ryots were beginning to cultivate in the Multar, it would be advisable to prevent this until the question of Plantation is settled. An ample area unfitted for planting operations, will eventually be available for cultivation.

Cultivation in Multar.

15. The question as to whether the operations now proposed a Gingee and Villapuram (*i.e.*, the Reserves and Plantations) should be undertaken by Imperial or Local Agency may be considered along with the proposals themselves—it is not for me to offer an opinion one way or the other, my bias being, of course, with the Special Department I would merely remark that all such Reserves and extensive Plantations in connection with Railway and general trade demands have been placed under the Conservancy Department in other districts, and that where the Department is working, a separate or Local conservancy has invariably been found to cause disagreement and loss. I do not mean that the village topes, free jungles, etc., should not, as now, be immediately under the supervision of the Divisional and Talook Officers ; but there should, I think, be no separate revenue or disbursements which should be all Imperial or all Local.

Operations undertaken by Imperial agency.

Disadvantages of double system in the same place.

16. The current expenditure for preliminary demarcation, etc., is meanwhile being met from funds placed at my disposal by the Collector.

Current expenditure.

DEPUTY CONSERVATOR'S OFFICE,
ON CIRCUIT,
CAMP CHINN SALEM,
4th March 1869.

(Signed) C. J. WALKER, Lieutenant,
Deputy Conservator of Forests.

B.

Statement shewing quantity and description of timber, etc., removed from the Salem Forests on Licenses and Tickets during the official year 1868-69.

District.	Bandy loads.									Head Loads.							
	Timber.			Total of bandy loads of Timber.	Firewood, bamboos, etc.				Total of Bandy loads of firewood, etc.	Grand Total of Bandy loads.	Timber.			Bamboos, etc.			Total of Head loads of Bamboos, etc.	Grand Total of Head loads.
	First class.	Second class.	Third class.		Firewood.	Bamboos.	Bark.	Charcoal.			Jungle wood.	Karoongli and Satin wood for ryots.	Total of Head loads of Timber.	Bamboos.	Bark.	Charcoal.		
Salem ..	368	164	252	784	13,212	5,417	924	4,802	24,355	25,139	3,971	330	4,301	73,214	81	562	73,857	78,158
	368	164	252	784	13,212	5,417	924	4,802	24,355	25,139	3,971	330	4,301	73,214	81	562	73,857	78,158

CAMP SALEM,
5th May 1869.

(Signed) C. J. WALKER, Lieutenant,
Deputy Conservator of Forests,
Salem and South Arcot.

C.

Approximate Staemtent of articles granted on free passes to ryots for gricultural purposes and erection of villages or houses destroyed by fire, etc., during the year 1868-69.

District.	Bandy loads of Jungle wood.	Bandy loads of Moongils.	Bandy loads of split Moongils.	Bandy loads of firewood.	Head loads of Ooroots.	Head loads of Props.	Head loads of Pen Props.	Head loads of Poles and Pegs	Head loads of Plough shares.	Head loads of handless.	Head loads of Yolkes.	Head loads of Moongils.	Head loads of split Moongils.	Heads loads of Charcoal.	Head loads of Frames.
Salem ...	136	3	.....	30	2,042	7,384	10,273	7,328	4,520	635	926	50,710	26,045	48	727

CAMP SALEM,
5th May 1869.

(Signed) C. J. WALKER, Lieutenant,
Deputy Conservator of Forests,
Salem and South Arcot.

SALEM DISTRICT D.

Abstract of the Statement of timber, etc., confiscated and sold during the year 1868-69.

Description.	No. of Bandy loads.	No. of Head loads.	Amount realized.	Amount credited.	Amount distributed, rewards.
	RS.	RS.	RS. A. P.	RS. A. P.	RS. A. P.
Atcha, Vengay, Saten, etc....	36¼	2	355 12 9	246 1 0	109 11 9
Namai Parambai, etc.	35½	... ..	228 7 8	165 3 8	63 4 0
Jungle wood, etc., ...	36¼	101	151 9 10	103 13 9	47 12 1
Bamboos	43¾	344	198 4 3	131 10 10	66 9 5
Split Bamboos	4	75	31 10 0	22 14 9	8 11 3
Firewood	114	.....	148 11 6	94 0 5	54 11 1
Charcoal	6	26	17 5 10	14 5 4	3 0 6
Avarum bark	8¾	3	35 3 0	20 15 6	14 3 6
Valum bark...	.....	5	0 9 0	0 8 4	0 0 8
2 Pieces of Mangoewood	.....	.....	4 8 0	4 6 0	0 2 0
2 Moongil doors with wooden frames	.....	.....	1 12 0	1 0 0	0 12 0
Total ...	285	556	1,173 13 10	804 15 7	368 14 3

CAMP SALEM,
5th May 1869.

(Signed) C. J. WALKER, Lieutenant,
Deputy Conservator of Forests,
Salem and South Arcot.

APPENDIX F.

CAMP MADURA, 16*th April* 1869.

From

A. APPAVOO PILLAI,

Overseer in temporary charge of Madura and Tinnevelly Forests.

To

MAJOR R. H. BEDDOME,

Officiating Conservator of Forests,

Ootacamund.

SIR,—I beg to submit the Annual Report of the Madura Forests for the official year 1868-69.

1. *Name of the Officer in charge*—Mr. Turnbull was removed to Manantoddy in May last, and the establishment was reorganized by appointing a Deputy* Conservator to supervise Madura and Tinnevelly, consequent upon the death of the Deputy Conservator, which sad event took place at Palyemcottah on the 5th March 1869. I received orders from the Officiating Conservator of Forests, to take charge of the Office records and to carry on the current duties, and it therefore devolved on me to write out this summary. During the last year the late Deputy Conservator travelled throughout the Madura and Tinnevelly Forests.

*Vide G. O., No. 29, dated 6th January 1869.

2. I was appointed an Overseer in August last, and assumed charge of my duties on the 26th September, and proceeded at once to make myself acquainted with the extent of the forests, their resources, outlets and general workings so as to enable me to carry on the duties entrusted to me with zeal and energy. During a period of six months I traversed the Karandamallays in the Meylur Talook, Kodikanel, all the forests near Cumbum, Gudalur, Pulney, Veroopatchy, Davadanaputty, Palamaally Koothanatchy, Kooroogunoothu, and Gudalur Tavalum.

3. I have invariably taken the advice of the Revenue authorities in all matters connected with conservancy, and am happy to report that no cause of complaint rose and the working of the Department has gone on very well, and I trust it will continue so hereafter.

4. *Conservancy of Forests.*—The forests in this district were strictly conserved, and the Cumbum forest was worked solely by the Department, all Teak and Blackwood saplings are systematically preserved by the removal of creepers and brushwood around them, this operation was performed by the fixed Establishment, next year it will be necessary to engage mercenaries to do this work, for the number of peons is quite inadequate and their time is wholly taken up in routine work, such as watching at Tannah stations to check licenses, and to prevent clandestine removal of timber.

5. The forest situated on the western side of Venathipara Vakal where cattle grazing was going on, and where much damage was done by cattle drivers, was also ordered by the late Deputy Conservator to be reserved and to put an entire stop to cattle grazing on account of the many valuable timber trees growing thereon, such as *Teak*, and *others* included in our reserved list, mostly of the family of *combretaceæ* which are so remarkable for the height and size of their trunks and toughness of their timber.

6. The increasing demand for timber in this district available for Government and private purposes renders it very important that these two forests should be carefully watched and preserved and measures adopted not only to prevent inroads upon them with the axe and conflagration but to watch the trees and timely provision taken against their being choked by the undergrowth which springs up around them, and also to prevent closeness of growth which impedes a free circulation of air and an adequate supply of nutriment to plants.

7. *Aundiputty Forest*—This forest is now in a state of infancy situated on the three hills which form one chain, viz :—

1. Anacul Malay.
2. Suntha Malay.
3. Koottoo Malay.

I ascended the ghaut by a winding bullock path much trodden by cattle and sheep, and impassable for a horse on account of immense amount of detached stones. In the ravine between Anacul

and Suntha Malay I found Teak, most of them shooting out from old stocks. Palay (*Mimusops hexandra*) Oosloo, Thanacoo, Sali (*Acacia planifious*) and Tencali I calculated the pass to be about a mile long, on the top of these two hills viz., Anacul and Suntha Malay, the villagers residing in the neighbourhood have practised Poonacad (Kamari) destroying several Teak saplings. I have addressed the Tahsildar of Periacolum in the matter, who I am happy to report has adopted measures to put a stop to this destructive practice. In the foot of Anacul Malay and to the right side of Ooslumputty road, there is a fine tract of Teak forest, which was mutilated by the inhabitants in the neighbourhood some years ago; whenever they were in want of a piece of wood either for handles of tools or for any trivial purposes, they entered the forest without any fear or hesitation cut at random all saplings of straight growth, the trunks thus mutilated shoot out again with difficulty, and are generally crooked or stunted. The peon has been enjoined to watch this tract of forest. I intended to have thinned and pruned some teak plants during my visit, but the unexpected death of the Deputy Conservator has called me away to Periacolum to await for orders from Head-quarters.

8. *Koothoora Malay*—In this forest there are many promising saplings of Vengay, Vaghe, Veckali, Karoonthovari, Kattoo Nochi and Poorasoo. These forests, if strictly conserved and allowed to rest for sometime, I have not the least hesitation in stating that in course of few years they will yield valuable timber trees.

9. *Kodikanel.*—This sanitarium is becoming more popular and many Europeans resort to it at all seasons, the fuel requirements consequently are increasing daily ; it is necessary to prevent as much as possible the clearance of the shola now in existence to preserve the water spring. The late Deputy Conservator in December last has raised the seignorage on fuel from five Annas to one Rupee per cart load, at Kodikanel there were 110 bandy loads of fuel consumed by the residents during the past year. In October last 20 trees were marked by me which I considered were old or in a state of decay, and that they would therefore be of no use for timber, the whole 20 trees have been felled and removed by license holders and for further requirements, we shall have to give good trees from the shola, the destruction of which will not only spoil its beauty, will naturally effect water supply. I therefore think it necessary to form a plantation of Australian trees such as Acacias and *Eucalyptus* to meet the prospective and increasing demands of the Residents. It is scarcely necessary to dwell upon the advantages to be derived from promoting this desirable measure, but they may be briefly stated ; 1, plantations improve the soil and secure the permanency of springs ; 2, plantations shelter from the violent winds and modify the climate ; 3, they furnish materials for house building and furniture, etc. ; 4, they furnish fuel and fencing materials ; 5, they are ornamental.

10. In 1864 a good number of *Australian* seedlings were planted but want of care and attention to keep them away from the devastation of *rats, hares, porcupines and frost* have been the cause of their failure.

11. H. W. Bliss, Esq., the Acting Sub-Collector, has recommended Shembaganoor as the most suitable site for this plantation.

12. *Quantity of timber felled and stored in Depot.*—This operation has been confined chefly to Vengay and the felling of Teak has been put a stop to. As Vengay trees are only found in most inaccessible places, the felling, squaring, dragging, and eventual delivery at Cumbum store has therefore cost us 12 Annas per cubic foot, but the selling price is from 1 to 1¼ Rupees ; thus obtaining a clear profit of 4 or 8 Annas respectively per cubic foot ; this I beg will be considered satisfactory. During the year, 1,255 cubic feet of Vengay were brought to Cumbum Depot by me.

13. *Depot.*—To accomodate the public as much as possible and to meet the requirements of Department Public Works it would be necessary to form a depot at Periacolum. The late Deputy Conservator fully intended to have one established at Periacolum during 1869-70, where timber requirements are daily increasing, for this purpose he has selected a site along the western side of the Paumbar river and the land is to be given to us by the Revenue authorities.

14 *Number of Licenses issued during the year.*—Nine hundred and twenty-five licenses were issued during the year for removal of timber, etc., by seignorage realizing a sum of Rupees 3,327-15-0.

15. *Sale of confiscated timber.*—A sum of Rupees 144-12-0 has been realized by the sale of confiscated timber and credited to Forest Revenue exclusive of the amount paid to informers.

16. *Sale of timber from Cumbum Depot.*—Rupees 7,050 were realized by the sale of timber from the depot.

17. *Timber supplied to Department Public Works.*—No demand was received by any Public Department for timber during the official year.

18. *Plantation.*—The commencement of a Teak and Blackwood Plantations has been made at Cumbum ; the late Deputy Conservator and myself have selected a suitable site along a rivulet and cleared about twenty acres of land at a cost of Rupees 43-0-7, it is hoped that during the next monsoon to have 20,000 saplings put down. A sufficient quantity of Teak and Blackwood seeds have been collected. The great difficulty is the want of labourers, almost all the villagers in the neighbourhood of Cumbum are now employed on the great Mulliar project at 6 Annas each per diem with an addition of Rations, but I have availed myself of the services of Poliars who are under my instruction in felling and clearing the jungles, etc., for the plantation. These wild men are naturally an idle race; for when they have earned a few measures of Ragi, or a few Rupees they become contented with that and refuse all work till they have spent the whole, the only advantage we derive by employing them is being indigenous they enjoy immunity from fever incident to casual residents in this forests.

19. *Trespasses and damages committed, and the result of Prosecution.*—Three cases of Forest offences were prosecuted. One was dismissed and the other two were duly punished.

20. *Health of the Establishment.*—The health of the establishment during the year has been on the whole good, few peons have suffered from jungle fever contracted in the Cumbum valley a good dose of Quinine has put them all right.

21. *Insufficiency of Establishment.*—The number of peons sanctioned I beg to report is quite inadequate, and the forests are consequently partially protected, as the Police render us little or no assistance. I deem it necessary to have five* more peons in addition to the present fixed establishment. If Government be pleased to sanction this establishment it will render our Department to exercise a more efficient supervision.

Pulney ...	...	...	2.
Periacolum	...	...	1.
Nuthum ...	...	...	1
Cumbum...	...	...	1.

22. *Rare plants discovered.*—No rare plants were discovered.

23. SUMMARY OF OPERATIONS.—*New road from Periacolum to Mulliar.*—It is hoped that in course of few years the formation of a new road from Periacolum to Gudalur from thence to Mulliar will open an avenue of traffic between the rich talooks of Madura and Periacolum.

24. *Demarcation of Government Forests.*—Nothing has yet been done in regard to the settlement of the boundaries between Government and Zemindary forests, which are so interwoven with ours, that all our efforts to prevent clandestine felling have proved ineffectual, while it renders timber merchants ample opportunity of smuggling Government timber under the cover of Zemindary passes, which are easily obtained, and the timber felled in Zemindary forests are dragged through our forests.

25. *Assistance rendered by Revenue authorities.*—It is gratifying to report that the Tahsildars of Periacolum and Pulney have done their best to render this Department every assistance. H. W. Bliss, Esq., is taking a great interest in Forest Conservancy.

26. *Office Establishment.*—Writer, N. Subbien is a painstaking and careful man and has perpormed his duties with great zeal and given satisfaction to the late Deputy Conservator of Forests and myself. The Duffadars and Peons have also evinced much zeal in the discharge of the duties entrusted to them.

27. Financial results of Madura and Tinnevelly Forests, vide pages 9 and 10, paragraphs 65 and 73.

I have the honour to be, etc.

(Signed) A. APPAVOO PILLAY,
Overseer in temporary charge of
Madura and Tinnevelly Forests.

APPENDIX G.

COIMBATORE, *29th April* 1869.

From

CAPTAIN H. M. GOSLING,
Deputy Conservator of Forests,
Anamalay and Paulghaut Forest Ranges.

To.

MAJOR R. H. BEDDOME,
Officiating Conservator of Forests,
Ootacamund.

SIR,—I HAVE the honour to forward an account of the operations carried on during the official year 1868-69, in the forests under my charge.

Anamallay Forest.

2. The early commencement of the south west monsoon enabled work to begin on the 15th June, from which date to the end of that month was occupied in repairing the forest roads and communications, repairing the timber slip, constructing accommodation for the Establishment at Toonacadavoo and conveying the Government carts to the top of ghaut. The carting of logs commenced on the 1st July and the slipping of timber by the elephants on the same date.

Preliminary preparations for the working season.

3. In the meanwhile myself and Overseers were engaged in tracing the line for the new ghaut sanctioned in G. O., No. 1,141, dated 28th April 1868, and the collection of materials and labour for its construction were also accumulated. The formation of a ghaut to the Teak Forests on the Anamallays was first recommended by Ensign (now Major) Michael in the year 1818," when he traced a pass down the hill side at a slope practicable for carts. The length of the trace was about 6 miles, but though Colonel F. Cotton, Madras Engineers, went over the line with him and approved of it, he considered it too great an expense to incur at that early stage of forest work, and the timber has hitherto been slipped down the side of the mountain, constantly damaging the planks in their descent through striking against rocks laid bare by the heavy rains, for in spite of attempts made to drain the slip, it sometimes become a complete torrent. Captain Francis, Executive Engineer, Coimbatore District, estimated the probable cost of Ensign Michael's ghaut at 25,000, Rupees Colonel F. Cotton was also of opinion in 1850, that though Ensign Michael had traced a ghaut at such a slope, that the heaviest logs might be taken down it with safety on wheels, yet the nature of the hill-side rendered this a very expensive undertaking " and recommends that the slip be adhered to" Doctor H. F.C. Cleghorn, Conservator of Forests, in his second Annual Administration Report, No. 890, dated, 31st December 1859, Paragraph 17, Section 1 says " The estimate for the Anamallay Ghaut to supersede the present rude Timber slip, has been for some time before Government, and the extension of the road (to Cochin through Colongode) above alluded to is a strong argument in favour of making this ghaut."

Commencement of new ghaut.

Trace made by Ensign Michael in 1848, 1st Superintendent Anamallay Forests.

Injury to Timber from slipping.

Dr. Cleghorn's recommendations for a ghaut.

The expensive estimates submitted *alone* deterring Government from sanctioning the project, though subsequent events have shown that in the long run a ghaut of double the expense stated would have been cheaper than the existing mode of slipping, I ventured, from the success which had attended the construction last year of a forest road above ghaut, described in detail in the next paragraph of this Report, where daily *personal* supervision and payment had enabled me to ascertain the cheapness and rapidity with which a public work overlooked by a responsible officer could be conducted, to undertake to construct a ghaut for the sum of Rupees 5,000. This estimate received the sanction of Government and operations were commenced immediately the south west monsoon had softened the soil. After considerable search a trace was adopted which without being circuitous yet avoided cliffs and rocks to an extent sufficient considerably to modify the neces-

Expensive estimate submitted in 1848 by D. P. W.

Experience gained in the construction of a Forest Road suggests the idea of making a ghaut for 5,000 Rupees.

sity for extensive and expensive blasting. In this exploration I was ably assisted by the Head Overseer Mr. E. A. Storey. The line I adopted leaving the Forest road above ghaut at a gentle incline, runs round several low hills in a north-west direction, when it crosses the northern face of the Hills overlooking the Coimbatore District, traverses the old slip, proceeding almost south-east until it reaches the low country where it makes a turn to the north-west and is carried along the right bank of the stream flowing at the foot, which it crosses by a timber bridge and passing through the main depot joins the roads leading to Paulghaut and Anamallay.

Line taken by the ghaut.

I had applied for the services of an Overseer of the Department Public Works as well as some Sappers and Miners from the Corps at Bangalore, to aid in blasting and bridge building, but was informed that none could be spared. Thrown on my own resources I engaged the services of Mr. G. F. Meppen, to superintend operations. It gives me great satisfaction to state that he has conducted his duties with unremitting perseverance and patience and unswerving integrity and rectitude. While not presuming to expect that this ghaut would escape the critical decisions of a trained Engineer, yet I am satisfied that when it comes to be considered that *out* of the Department no assistance has been received in the construction of this work, its merits as well as failings will be impartially weighed by the Government.

Refusal of assistance by the Department Public Works.

Mr G. F. Meppen, appointed temporarily Ghaut Overseer on 100 Rupees per mensem.

The total number of working days, excluding Sundays and non working days when myself or Overseer were sick, occupied in the construction of this ghaut was ninety-six. The first tree felled on the trace was on the 18th July 1868, and the last finish given to the ghaut was on the 7th December 1868, on the 8th December the first batch of carts laden with timber, averaging twenty-five cubic feet, came down the ghaut with perfect ease. The operations were carried on during the prevalence of both the South-west and North-east monsoons, and to some extent this was advantageous, for it both softened the soil and tested the stability of the work. No accidents from felling or blasting occurred throughout the operations, and labour was never scarce, owing to the prompt and direct system of payment established. Fever and sickness was comparatively slight when the locality and exposure to the inclemency of both monsoons of unusual duration and violence is considered. Extensive use was made of the three trained forest elephants in dragging timber to the sites of the bridges, overturning rocks blasted and huge stumps of trees dug and cut out of the ground by axe-men and labourers. These elephants could in a few minutes overturn down the steep hill side masses of rock and stumps of trees, which 50 men would have taken half-a-day to have done with crowbars and levers. Their special training and natural intelligence and sagacity enabled them intuitively to asssist each other at opportune moments so exactly that even to those accustomed to observe these valuable and useful animals at daily forest labour, their efforts appeared surprising.

Ghaut made in 96 days.

South-west and North-east monsoons.

Immunity from sickness.

Valuable aid afforded by the Government Forest Elephants.

Their singular sagacity.

The gradient of the ghaut is in places one in twelve, in others one in fifteen and on an average one in eighteen. Some parts however are one in twenty, while others are level. The embankments are revetted with stone, in which work the local laborers peculiarly excel. The sides as well as the beds of the ravines crossed by bridges of timber, are similarly revetted. A main channel conveys the water into a deep, trench revetted also, entirely draining the ghaut and empties itself into a ravine running parallel with the timber slip.

Gradient.

Drainage.

One hundred and thirty yards of rock and stone have been removed by blasting. The uniform width of the entire road is fifteen feet. The bridges twenty-one in number averaging twenty-five feet × fifteen, are built of stout logs laid across the stone revetted ravines, with cross poles placed transversely over them, on which split bamboos support the roadway. This forms a

Blasting.

Stone revetments.

Bridges.

compact structure capable of supporting three or four tons weight. Bridges of this description are common in these forests, and have been proved to be both substantial and lasting. Several landslips occurred during the construction of the ghaut after the completion of the upper portion, which entailed much additional labour and expense, included however, in the total cost of the work. The zig-zags are nine in number and are confined to the upper half of the ghaut, none being necessary during the latter portion. The total length of the ghaut road is two and three quarter miles, and the cuttings vary from sixteen to two and half feet in depth. By the completion of this important work, the conditions of service and residence on the Anamallays become entirely altered. A great saving is annually effected by the decrease in the number of elephants required to be maintained. Injury to the timber, formerly so exposed in its rough passage down the rocky slip, is avoided. Rendered accessible to wheeled traffic, the development of these magnificent forests, containing the only timber of the scantlings demanded for ship building in India, is now accomplished effectually. The terrors of a four months residence in the malarious climate of these Forests, hitherto a fatal obstacle to the employment of Contractors, save by large and ruinous advances, are removed. Labour is now easily obtained, operations are rendered easier, and expenditure curtailed, while exposure from a lengthened residence is avoided. This has been accomplished for a sum which seems paltry when considered in relation with the advantages gained, the entire cost of the whole undertaking including the salary of the temporary Overseer, amounting to Rupees 4,009-7-10, being Rupees 990-8-2 less than the estimate I submitted, and Rupees 20,990-8-2 less than the estimate submitted by the Department Public Works in 1848 or 20 years back, when labour and materials of every description was 50 per cent. cheaper than at present. In their order, No. 431, dated 19th February 1869, the Government were pleased to record their entire approval at the successful, expeditious and economical construction of this ghaut.

Land slips.

Length.

Cuttings.

Results.

Objections of Native Contractors overcome.

Saving effected.

Advantages gained.

Entire cost.

1848 and 1868.

Complimentary order of Government.

4. Second only in importance to the preceding work was the completion of the new road through the western portion of the Teak Valley, the first half of which I commenced in 1867. This road which is 3½ miles shorter than the old cart road running through the eastern side of the Valley, connects the new ghaut with the most valuable part of the Teak Forest recently renewed on lease from the Numboody of Colungode, besides developing a large portion of Government forest proper. Its entire length is five miles, with a rise of 1,000 feet in that distance. The ravines in its route are crossed by twelve substantial timber bridges. It has a uniform breadth of eighteen feet and the forest on each side has been cleared to thirty feet to prevent the drippings from trees falling on it and to secure the requisite amount of sun shine to keep it dry. The total cost of construction amounts to Rupees 1,154-2-5, being at the rate of Rupees 230-13-3 per mile. By this road almost the whole of the timber is now exported as from its lesser gradient and distance a large saving is effected in time, labor, and carriage. It will be useful to Government to learn that the secret of the economy with which these two public works have been executed lies in their superintendence personally and daily by a responsible officer. By the non-employment of contractors. By the adoption of a ready money and daily system of payment. By systematising labour and insisting daily on the observance of the system originally introduced until completion of the work.

New Road through western portion of Teak Valley in the Anamallay Forest.

Secret of economy in the construction of Public Works.

5. The repair of the road leading from foot of ghaut to Colungode has been executed to within a mile of Chumnumpuddy for Rupees 570-2-0 under the superintendence of Mr. Overseer Meppen.

Repair of road to Colungode.

GOVERNMENT SECRETARIAT LIBRARY.

6. The present route by which our timber is conveyed, viz., by carts to Mungarah near Paulghaut and thence down the Ponany River to the coast having been attended with much difficulty and involving the annual repair by the Department of the road from the foot of ghaut to Mungarah, which is wholly impassable during the South-west and North-east monsoons, leaving us only the hot season to cart in, which is next to impossible on account of the scarcity of water, has induced me to consider whether by abandoning it and substituting instead that *via* Anamalay and Polachy to Coimbatore Railway Station, and thence by Rail to Beypore would not greatly simplify and expedite operations, besides ensuring regularity of supply at all seasons irrespective of monsoons and freshes in the river. The rate per cubic foot would be slightly in excess of present rates, but the advantages gained would more than balance this extra expense. The Agent and Manager, Madras Railway Company, has intimated his willingness to meet my views as much as lies in his power, and I have decided, as an experiment, on conveying some timber by the proposed route. The Railway Company are prepared to lower their rates as much as is consistent with their interests so as to secure the trade in the conveyance of timber between Coimbatore and the Western Coast, for which at present they have no sufficient demand.

Proposed alteration of route for the Anamalay timber to the coast.

Desire of Railway Company to secure a Timber Trade.

7. No felling took place on the Anamalays during last season, the Government carts being employed solely in the removal of timber felled in previous years. No contractors would come up to work above ghaut, but since the completion of the new ghaut road and forest road, they have expressed a desire to be employed next season. Fever has carried off several of the subordinates, among others the Foujdar in charge of the Elephant Establishment.

Operations during working season.

Deaths from Fever.

8. The financial results of the past year are exhibited in page 11, Paragraph 89 of the Conservator's Report, the total expenditure is less by Rupees 4,000, than last year, although the ghaut and forest road are included. The receipts are better than in preceding years, but unfortunately owing to the dilatoriness of the Bombay authorities the value* of the timber supplied to them† not having been credited within the official year, does not appear. The revenue derived from the license and voucher system is Rupees 3,356-10-1 in excess of what it was last year. This is to be attributed to the more effective supervision exercised since the appointment of the extra establishment for the conservancy of the forest in the Coimbatore and Oodoomalpettah Talooks. The sum of Rupees 3,087-6-2 was realised at auction by the sale of refuse, burnt and rejected timber.

Financial results.

* Rupees 53,530-4-2.

† Superintendent of Marine, and Agent for Gun Carriages at Bombay and Madras.

Increase of revenue from the license and voucher system.

Auction Sale.

9. No Timber was lost during the prevalence of the annual fires in January and February, precautions to secure the depots having been satisfactorily adopted.

No timber lost from fire.

10. The outstandings amount to Rupees 4,070-0-10. I have appointed an assistant Overseer to prosecute the defaulting contractors.

Out standings of former years.

11. The Head Overseer, Mr. E. A. Storey, whom I appointed last year, and who gave satisfaction during his tenure of appointment, suffered so repeatedly from fever contracted at Toonacadavoo as to be compelled to resign. I have not yet found a competent person to succeed him permanently.

Changes among Overseers.

12. The three elephants have dragged and slipped 600 planks and logs which at a little over seven annas per cubic foot, amounts to Rupees 2,100, against their feed and keep of Rupees 1,940-1-10.

Work performed by Government elephants.

The cart establishment consisting of forty carts and fifty pairs of bullocks, conveyed 587 logs and planks, containing 8,805 cubic feet of timber from the depots in the Anamalay Forest to the head of ghaut, as well as 855 pieces of timber containing 12,825 cubic feet from the foot of ghaut to Anamalay for auction, and 82 logs

Work performed by Governments carts.

and planks containing 1,312 cubic feet of timber from foot of ghaut to Mungarah floating depot. In addition to which, they carted 24 Rose-wood logs containing 480 cubic feet, and 8 Vengay logs containing 128 cubic feet from the foot of the Sholakurrray Hills to the Railway station at Waliar. The total number of cubic feet conveyed by the cart establishment, amounts to 22,110, which at contractor's rates amount to Rupees 6,909-6-0 against their feed and keep of Rupees 3,324-3-6.

Carting by Contractors.

13. 509 planks and logs were carted by Contractors from foot of ghaut to Mungarah, containing cubic feet 7,635 at a cost of Rupees 2,414.

Floating.

14. 1,210 planks and logs were floated down the Ponany river at 6 Annas per plank.

Bolumputty Forest.

15. This Forest situated 13 miles due west of Coimbatore has been under the supervision of Assistant Overseer Mootoosawmy Pillay. No felling operations took place owing to the uncertainty existing as to what portion is actually included in the grant of forest land held by Andusait a merchant of Coimbatore to whom it was mortgaged by a Parsee named Morwanjee for a debt considerably in excess of its value. The Sait being interdicted by caste rules from engaging in the timber trade is desirous of selling his property, but until the limits of his grant are freshly surveyed it is impossible either to value its extent or price, owing to the vague nature of the terms of the deed and the imperfect and inexact survey originally made of the locality, by which it now appears that he is entitled to claim not the actual number of acres mentioned in the deed, but the *whole area* of forest land situated within the definition of the boundaries specified therein, and which must contain at least ten times as much. He is at present clearing his boundaries when a survey will take place, and the matter further considered and reported upon. The revenue derived from the issue of licenses and tickets in this forest amounts to Rupees 3,206-5-3 against Rupees 1,310-1-9, being cost of the establishment maintained for its supervision and conservancy.

Chenat Nair Forest.

16. The Cheenat Nair Forest which lapsed to Government on the death of the owner, Chenat Nair, is situated five miles to the north of Paulghaut, and has been under the superintendence of Mr. Overseer J. E. Lloyd. The operations consist of the felling of—

52 Logs of Rosewood.
32 ,, Jungle-wood.

for the Bombay Marine Department, the whole of which were slipped by hired elephants of the above,

26 Jungle-wood logs.
49 Rose-wood ,,

were conveyed by contract to the Paulghaut Railway station,

22 Jungle-wood logs.
13 Rose-wood ,,

were conveyed by rail thence to Tiroor, and floated by back-water to Ponany for the Bombay Marine.

35, Rose-wood logs, were despatched by rail from Paulghaut for the Madras Gun Carriage Manufactory.

Sholahkurray Forest.

17. The operations in the Sholahkurray Forest, which is contiguous to the Chenat Nair and situated opposite to Waliar, half way between Coimbatore and Paulghaut, has also been under Mr. Lloyd's supervision. The operations consisted of felling,

4 Rose-wood logs.
3 Vengay ,,
9 Jungle-wood logs.

and the preparation of 91½ pairs of teak spokes and felloes, with 685 cubic yards of fuel. The former item in our operations has proved very remunerative and is highly creditable to Mr. Lloyds' foresight and economical application of otherwise waste timber to useful and saleable purposes, and has

Spokes and felloes from refuse teak.

been eagerly appreciated by the public who rapidly purchased all the supply. This information may be useful in other ranges, where a difficulty is experienced in turning to profit or disposing of refuse pieces of timber and stumps of felled trees and branches. The cost of preparation of the spokes and felloes per pair amounts to Rupees 1-12-0, and realized Rupees 8-0-0, yielding a profit of Rupees 6-4-0 ; while the fuel sold for Rupees 176, and cost in supply Rupees 99. Hired elephants were employed in slipping the undermentioned timber felled last year :—

73 logs of Rose-wood.
9 ,, Jungle-wood.

Contractors carted from the foot of the Sholahkurray hills to the Waliar Railway station the following :—

81 logs of Rose-wood.
39 ,, Vengay.
9 ,, Jungle-wood.
91½ pairs of spokes and felloes.
685 cubic yards of fuel.

The Government cart establishment removed

24 Rose-wood logs.
8 Vengay * *Vide* paragraph 12.

Of the above, the following was despatched by Rail for the Madras Gun Carriage Manufactory

36 logs of Rose wood.

For the Department Public Works at Erode,

26 Logs, of Vengay,

For the Bombay Marine to Tiroor station by rail and thence by back water to Ponany.

13 logs of Rosewood,
20 do Teak,
5 do. Jungle wood,

Waliar Fuel Reserve.

18. The forest land purchased for the fuel reserve at Waliar was handed over to this department by the Collector of Coimbatore on the 27th March 1868.

It has been enclosed on the eastern and western sides by a trench 3 × 3 feet with an embankment three feet in height, planted with an aloe hedge, for the sum of Rupees 950-12-2. The north side of the reserve is shut in by the Sholahkurray hills and the south by the Railway. Within the area of the reserve 2,980, Teak saplings have been pruned and freed from creepers, six acres have been cleared for a nursery which is irrigated by an anicut formed across a stream that skirts the reserve, one thousand seeds of the Acacia Arabica were put down, most of which came up and are doing well. The site of this reserve being within the influence of the south-west monsoon is likely to succeed, with a moderate outlay, in producing a constant supply of fuel for the Railway.

Casualties from tigers.

19. Several casualties have occurred among the cattle from tigers both in this forest and on the Anamalays which are very numerous and bold, and often attack the cattle in the open during the day time while they are grazing within sight of the drivers. I recommend a few muskets being issued with blank ammunition to frighten them away. Several animals died from murrain at Anamalay last May which was very prevalent among the ryots' cattle.

Demand of Timber in excess of supply in depots.

20. The demand for Teak and Rosewood by the Bombay Marine and Gun Carriage, and Madras Department Public Works and Gun Carriage still continues, and is much in excess of the large seasoned stock in depot. Consequently I intend felling as much next working season as will meet these demands and reserve a sufficient supply of seasoned wood in depot for future requirements.

21. Financial Results, Vide pages 11 to 13, paragraphs 89 and 98.

I have the honour to be, etc.,

(Signed) H. M. GOSLING, Captain,
Deputy Conservator of Forests,
Annamallay and Paulghaut Ranges.

B.

Statement showing quantity and description of timber, etc., removed from the Annamallay and Bolumputty Forests on License and Tickets, during the official year 1868-69.

	Bandy loads of timber.		Bandy loads.			Total bandy loads timber.	Grand Total of bandy loads.	Head loads.		Head loads.		Bullock loads.		Total of head loads.	Total of bullock loads.	Grand Total of head and bullock loads.
	First Class.	Second Class.	Firewood.	Bamboos.	Veilum bark.			Bamboos.	Firewood.	Charcoal.	Veilum bark.	Firewood.	Bamboos.			
Coimbotore	10	52	4,610	1,139	...	62	5,811	971	11,626	33	78	282	...	12,708	282	12,990
Polachy	20	86	1,123	1,161	2	106	2,392	3,734	546	490	...	1,021	91	4,770	1,112	5,882
Oodamulpettah	...	...	2,915	...	...	...	2,915	...	...	...	...	...	...	...	...	...
Grand Total...	30	138	8,648	2,300	2	168	11,118	4,705	12,172	523	78	1,303	91	17,478	1,394	18,872

COIMBATORE,
29th April 1869.

(Signed) H. M. GOSLING, Captain,
Deputy Conservator of Forests,
Annamallay and Paulghaut Ranges.

APPENDIX H.

94.

OOTACAMUND, 10*th May* 1869.

From

Lieut.-Colonel W. R. MORGAN,

Deputy Conservator of Forests.

To

Major, R. H. BEDDOME,

Officiating Conservator of Forests.

SIR,—I have the honour to forward the Annual Report of the forests under my charge, for the official year 1868-69.

2. The total expenditure amounts to Rupees 76,882-10-7, and the returns to Rupees 1,19,184-5-2, showing a profit of Rupees 42,301-10-7 for the year, with wood in store valued at Rupees 1,97,224-5-8.

3. *Mudumalli Forest.*—The operations in the forest for the past year have been conducted by Overseer Iyasawmy Naick, who has given satisfaction.

		RS	RS	A.	P
Teak		17,501$\frac{5}{8}$	=1,610	11	11
Vengay		5,959$\frac{1}{2}$	558	11	11
			2,199	7	10
Junglewood			114	1	0
			2,313	8	10

4. *Felling timber.*—The quantity of timber felled and stored is but small by 23,460$\frac{3}{8}$ cubic feet, at a cost of Rupees 2,313-8-10, the large stock of timber on hand being still sufficient for a three years' supply to the Public Works, etc.

5. *Sawing timber.*—The amount of sawn timber is very small, Sawyers being difficult to procure and almost impossible to retain in the forest without a Labor Contract Law.

6. *Dragging timber.*—Elephants, three in number, have dragged from the forest to the road 45,587$\frac{1}{8}$ cubic feet of Teak and Vengay which, at two annas per cubic foot amounts to Rupees 5,698-6-3 against their feed and keep of Rs. 1,969-10-8.

7. *Carting timber by Circar bullocks.*—During the past year 25 pairs of bullocks and carts have been employed in carting timber from the further depôts in the forest to the main road at Tippacadu and other depots on main roads. 38,742$\frac{7}{8}$ * cubic feet of Teak have been carted, which at Contractor's rates amounts to Rupees 9,946-10-1 against their feed and keep of Rupees 6,794-5-3 leaving a small surplus for purchase of bullocks and repair of carts.

	RS			RS	A	P
* Moothenthodoo to Bennie ...	11,360	at	2 as	1,420	0	0
Do to Mudumallai	1,350	at	3 as.	253	2	0
Do and to Tippacadu ...	20,996	at	5 as	6,561	4	0
Do to Goodalore P. Works...	713$\frac{1}{4}$	at	6 as	267	7	6
Do to Seegur...	886	at	6 as	332	4	0
Mudumallai to Goodalore P. W.	472$\frac{1}{2}$	at	6 as	177	2	0
Do to Sultan's Battery P. W.	1,371$\frac{1}{2}$	at	6 as	514	3	6
Tippacadu to Goodalore P. W.	798	at	6 as	299	4	0
Do to the Bridge	632$\frac{1}{2}$	at	$\frac{1}{2}$ as.	19	12	1
Mudumalli to Ootacamund ...	163$\frac{1}{4}$	at	10 as	102	3	0
Total...	38,742$\frac{7}{8}$	=		9,946	10	1

8. *Road.*—The main line of road has been kept in good repair, though floods and herds of Elephants have several times carried away the bridges. Every exertion has been made to carry wood out of the forest, to avoid loss by fire, and at the same time to meet all demands for Public Works, etc.

9. TEAK PLANTATION—*Want of labor contract law.*—The trees planted in 1864-65 have grown well, but the same want of labor that prevailed last year still exists; the grass increases at such a rate owing to the absence of labor at the right time, that a cooly will hardly face it, and the work done is very expensive. A labor contract law is the only remedy.

10. *The contemplation of a new plantation.*—A new plantation of about 8 acres is to be formed at Bennie this year. There has been some felling on the Mysore frontier, this line was not laid down by the late Lieutenant Fullerton, as he was removed before the dry season, the only time (on account of the long grass being destroyed by fire) when a line can be laid down. Measures will be taken to adjust this boundary as early possible.

11. *Criminal prosecution.*—There has been no criminal prosecution.

	Rs.	A.	P.
Carriage of timber by Circar carts paid for in cash	502	15	4
Bamboos and Firewood	17	9	0
Miscellaneous receipts	17	8	0
Total...	538	0	4

12. *Sale of timber.*—Timber sold to the public amounts to Rupees 3,545-11-5 which, together with the amount of Rupees 538-0-4* realized by seignorage, on bamboos, etc., has been carried to Forest Revenue.

† Ooty.	to Lawrence Asylum Works	19,640½ =	39,280	8	0
Do.	New church	455 =	910	0	0
Do.	New Jail	1,578½ =	3,156	8	0
Do.	Court House	95½ =	191	0	0
Do.	Workshop	190½ =	381	0	0
	Wellington do:... ...	1,098½ =	2,197	0	0
	Laboratory Works ...	178 =	356	0	0
	Talook Cutchery ...	196¼ =	392	8	0
	Chinchona Plantation...	444 =	888	0	0
	Sandynulla Bridge ...	139½ =	378	8	0
	Mailkonda do. ...	212½ =	424	8	0
	Coonoor do. ...	306½ =	613	0	0
	Nedivuttum do. ...	18¾ =	37	8	0
	Ooty water supply ...	2 =	4	0	0
		24,555 =	49,210	0	0
Mudumalli	Culpathy Bridge ..	1,843 =	2,751	0	10
	Nadookawny Road do.	713½ =	980	11	6
Tippacadu	Tippacadu Road do.	632½ =	1,081	2	0
	Nedivuttum do. do.	206¾ =	361	13	0
	Goodalore ghaut do.	591¼ =	1,034	11	0
Seegur—Mysmicoil	Seegur Bridge... ..	916½ =	1,374	12	0
	Police Station	32 =	64	0	0
	Total...	29,490 =	56758	2	4

13. *Supply of timber to the Department Public Works.*—The quantity of timber supplied from the Ootacamund depot to the Lawrence Asylum Works and other Public Works on the Neilgherries amounts to 24,555† cubic feet and that supplied from the Mudumalli Kharkana, etc., for the Goodalore ghaut, Wynaad road, etc., amounts to 4,935 cubic feet‡ or making a total of 29,490 cubic feet =Rupees 56,758-2-4 which has been adjusted by receipts from time to time.

14. *Stock of timber on hand.*—The quantity of timber to be accounted for is given in memorandum No. II furnished with the Annual accounts for the past official year.

15. *Unadjusted advances.*—The outstanding advances remaining to be adjusted amount to Rupees 3,603-10-4; the introduction of increased ready money rates has had a good temporary effect, there are no bad debts and the timber is carried pretty regularly with the exception of during the Coffee season when every bandy man deserts the forest for the Carcoor ghaut now open, and down which, it is reported some 4,000 Cart loads of Coffee were taken during the last season; this desertion is a serious matter, and can only be controlled by a Labour Contract Law. At present we have no hold over the Cart-men. In my opinion by giving small advances we should obtain lower rates, and with a Labour Contract Law, would always have a hold over the men. The men will not leave their villages and families without an advance, if they cannot get it from us, they resort to the money lender and pay from forty-eight per cent. to seventy-five; this is both ruinous and demoralizing; the borrower becomes hopelessly embarassed and finally runs away leaving the mortgagee with broken Carts and half starved bullocks, the money lender never loses, but is disatisfied if he does not make at least cent. per cent. The ordinary rates in the bazaar here are seventy-five per cent.

‡ Cubic feet 2,00,923=Rupees 1,73,650 14 0

January 1866-67.	January 1867-68.	January 1868-69.
11,144 6 0	4,856 13 5	3,603 10 4.

16. *Health of Establishment.*—The health of the Forest Establishment has been much as usual, Fever, Dysentry Ulcers, and Measles were also prevalent; the natives insist upon calling this decease, Small pox, so that I sent for a vaccinator upon the outbreak of Small pox being reported, and found it was only Measles. The Cooroomburs have a great dread of Small pox, and on a case occurring, abandon the sick person and desert the work in a body. The Medical Storekeeper again refused to supply me with Quinine, so I supplied it myself. Quinine administered with Salts and Jallop at the beginning of an attack of fever, is an invaluable remedy, and for many years I have cured many cases.

17. *Financial Result.*—In summarising the operations for the past year, I would observe that the financial result may be considered satisfactory, notwithstanding the increased carting rates.

Financial Results, vide page 13, paragraph 108.

18. FOREST WORKED BY THE OVERSEER—*Seegur and Sattiamungalum.*—These forests during the past year have been carefully worked and conserved by Overseer Appavoo Moodelly.

19. The quantity of Sandal-wood felled and stored in depôt is 4,278 Maunds, valued at Rupees 10,427-1-0.

* Felling, preparing, and carriage of Sandal-wood, also of Teak	Rs	A.	P.
	4,594	3	7
Feed and keep of Buffaloes..	243	13	1
Purchase of Tools	86	8	0
Sandal-wood Plantation	580	15	4
Miscellaneous	99	14	0
Total...	5,605	0	0

20. *Principal operations.*—The principal operations* during the year have been preparing Sandal-wood and forming experimental plantation of trees. The usual conservation of the forests has been carefully carried out.

21. *Dragging timber.*—But four pairs of buffaloes are employed in dragging timber, 800 Maunds of Sandal-wood have been brought to depôt, which, at the contract rates, amounts to Rupees 300 against their feed and keep of Rupees 243-13-1.

22. *Sandal-wood Plantation.*—The experiments in the Sandal-wood plantation are being carefully carried out, a large Nurserry at Tullamallai is kept up. Shade and water with favorable seasons are essential to the growth of the young plant. The last three years have been very dry, old trees in the jungles have died out, in fact three bad years make a sad gap in a forest, trees die out, seeds do not germinate and seedlings are stunted, in three good years the exact reverse takes place. 3,650 plants have been put out during the year at a cost of Rupees 580-15-4 including new nurseries and keeping of the old plantation.

23. *Trespasses committed.*—Special trespasses have been effectually stopped by the action of the Collector, some underhand proceedings were reported last year on the part of the Sub-Tahsildar, who has since been dismissed. In the giving of Sandal-wood land, it is not so much the large trees that are damaged, as the thousands of young seedlings that are completely destroyed. There is as a rule plenty of suitable land for ryots without their taking up Sandal-wood land.

24. *Health of the establishment.*—The fever this year has been milder, but the Overseer has suffered.

	Rs	A	P.	
Rupees.....	289	2	7	old
Do.	3,132	7	7	new
Total..	3,421	10	2	

25. *Unadjusted advances.*—The advances are small and will be adjusted shortly, the timber carriage advance was made to Mudumalli.

26. *Sale of timber.*—A small amount of wood sold on license at Sattiamungalum and Seegur is Rupees 1,759-3-0, which have been carried to the credit of Forest Revenue.

27. *Sale of Sandal-wood.*—The value of Sandal-wood sold to Merchants is Rupees 16,500, and of Teak Rupees 1,100.

28. *Supply of timber to Department Public Works.*—The supply of timber to the Department Public Works is Rupees 4,000.

29. Financial results, vide page 14, paragraph 116.

30. Financial result, vide page 15.

31. FOREST WORKED BY THE OVERSEER—*Bhowany Forest.*—The work during the past year has been carried on by Overseer Grant who has been diligent in the performance of his duty.

32. *Jungle conservation.*—The usual conservation of the jungles has been carefully attended to.

33. *Sandal-wood felled.*—The quantity of Sandal-wood felled and stored in depôt is 3,545½ Maunds, valued at Rupees 12,171-8-2.

34. *Formation of new plantation.*—There has not been any firewood plantation formed as yet, but ground at Bhowany near the river has been applied for, when made over a small experimental firewood plantation will be made. A site under the Burghoor hill has also been selected for a Sandal-wood plantation and operations will be commenced at once. The shade of the Poongamarum (Pongamia Glabera) has been found of service in protecting young plants.

35. *Criminal trespass.*—One or two cases of trespass have been reported and prosecutions instituted.

36. *Limit of operation.*—The operations have been confined to preparing Sandal-wood, issuing licenses and conserving the jungles.

37. *Health of the Establishment* —The Overseer and Peons have sufferd from fever during the past year.

38. *Sale of timber.*—The sales by license of Teak, Vengay, Aucha, have slightly increased; they amount to Rupees 3,856-1-10.

39. *Sale of Sandal-wood.*—The sale of Sandal-wood amounts to Rupees 12,000.

40. *Timber supplied to Department Public Works.*—There has been no timber supplied to the Department Public Works.

41. Financial results, vide page 15, paragraph 124.

42. Forest worked by the Overseer—*Collegal Forest.*—The operations for the past year have been carried on by Overseer Spring whose state of health does not enable him to travel through the forest as much as he ought to do. He takes his pension in November 1869.

43. *Jungle Conservancy.*—The conservation of the jungles has not been attended to so strictly as I should desire.

44. *Sandal-wood felled.*—The quantity of Sandal-wood felled and stored in depot is 3,833 Maunds, valued at Rupees 13,566-11-6.

45. *Limit of operations.*—The operations have been almost confined to Sandal-wood felling.

46. *Sandal-wood plantation.*—A small experimental Sandal-wood plantation has been commenced.

47. *Trespass.*—Criminal prosecutions are conducted here with difficulty. Witnesses will not come forward to give evidence with a prospect of having to journey to Coimbatore and back a distance of 250 miles. The Tahsildar has no jurisdiction over ten (10) Rupees. If a European Assistant were posted to this fine talook, it would be of great benefit to the people and the place.

48. *Health of the Establishment.*—There has been the usual amount of fever in the forest establishment.

49. *Sale of timber.*—A small amount of wood has been sold.

50. *Sale of Sandal-wood.*—Sandal-wood to the value of Rupees 14,000 has been sold to the merchants.

51. *Timber supplied to Department Public Works.*—No timber has been supplied to the Department Public Works.

52. *Sale of timber expected.*—A return from the sale of Vengay and other Jungle woods was expected, but owing to the adjacent Mysore words, little has been realized.

53. Financial results, vide page 16, paragraph 131.

54. Neilgherry Sholas—*Forest worked by the Overseers.*—These Sholas have been carefully conserved by Overseer Newman at Coonoor and Mettpolliem, and Overseer Taylor at Ootacamund.

55. *Boundaries.*—Boundaries of Government sholas and private estates are being laid down, but the work is tedious.

56. *Non-performance of Mr. Money's agreement.*—The tenant of Devi Shola not having performed his contract, this Department has suffered in its returns.

57. *Confiscation of wood.*—A good deal of wood has been confiscated, but as long as cases are brought before the village Monigar and trifling punishments are awarded, so long will there be stealing.

58. *Plantation.*—In the Eucalyptus timber plantation 780 Pines, and 1,814 E. Globulos have been planted, and 3,230, E. Globulos mossed. 7,500 are ready for planting out in beds, large quantities of European timber tree seeds have been sown. In the Governor Shola the Nurseries contain 3,550 Acacia Molissima and Milanoxylon.

59. *Shola operations.*—The operations have consisted in conserving Government sholas, forming nurseries, extending plantations of timber trees and supplying the Department Public Works with fuel.

60. *Health of the Establishment.*—The health of the Forest people has been good.

61. *Sale of wood.*—The amount realized from Licenses and from firewood, bamboos, etc., is Rupees 2,681-11-0.

62. *Supply of wood to the Department Public Work.*—1,633 bandy loads of wood were supplied to the Lawrence Asylum works and Wellington Workshop, the value of which amounts to Rupees 999-4-0, which has been adjusted on receipt furnished.

63. Financial results, vide page 19, paragraph 141.

64. WELLINGTON AUSTRALIAN FIREWOOD PLANTATION.—*Plantation worked by Mr. Newman.*—These plantations have been carefully carried on by Overseer Newman.

65. *Operations.*—The number of plants put out is as follows.

7,000 Australian Blackwood.
11,200 Acacia Molissima.

66. *Limit of operations and wood sold.*—The operations have been confined to planting, increasing the nursery and supplying firewood to the public from the old plantation. The receipts on this head have been Rupees 87-9-6.

67. *Health of the people.*—The health of the people employed has been good.

68. *Plantation improved.*—The trees are improving rapidly and the plantation is now in a position to supply the Barracks regularly with wood.

69. Financial Results, vide page 20, paragraph 145.

I have the honour to be, etc.,

(Signed) W. R. MORGAN, Lieut.-Colonel,
Deputy Conservator of Forests.

APPENDIX I.

From

G. CADELL, Esq.,
Assistant Conservator of Forests, South Canara.

To

Major R. H. BEDDOME,
Officiating Conservator of Forests, Ootacamund.

SIR,—I HAVE the honour to forward the Annual Report on the working of the South Canara Forests for the official year 1868-69.

2. *Superintendence.*—During the first eight months of the year these forests have been under my charge, but sickness compelled me to absent myself on medical certificate, for the following 3½ months, and I have just returned to my duty in time to close the accounts and draw up the report for the year. Mr. Goudie, Overseer in charge of the Uppinangady Range, has conducted the work during my absence.

3. FOREST WORK.—*Timber felled.*—For the same reason as stated in my last Administration Report, viz., the large amount of timber which was felled before I assumed charge of the District, no fresh timber has been felled except for the requirements of the Revenue and Public Works Departments and for the private use of ryots in places where there was no timber in stock. Timber indented for however, was prepared as under.

11 Junglewood logs = 11½ Bombay Candies.
177 Mangoewood logs = 378½ Bombay Candies. } For Messrs. Mann and Co. Mangalore, for the construction of Coffee cases.

9 Logs and 61 planks of Blackwood = 100½ Bombay Candies for the Gun-Carriage Manufactory Bombay.

4. A little Sandal-wood also was felled in the north of the district in order to ascertain its market value. The Sandal-wood of South Canara has little or no heart-wood, owing to the excessive damp of the climate, and the aroma is faintly perceptible. The trees do not grow to any size and

are sparingly scattered amongst the bamboo clumps in the north of the district. The price obtained for that sent down to Coondapore was Rupees 60 per Candy or Rupees 3 per Maund.

5. *Timber floated.*—Owing to the exceptionally heavy monsoon, the most important work of floating timber, was greatly retarded. As the Department has not as yet any Elephants of its own, and the number of Elephants belonging to private individuals is few and in great request ; floating timber in this district is not only an expensive but an uncertain operation. Elephants are not always obtainable, and are so liable to boils and other ailments which incapacitate them for work, that it is impossible to calculate on having a certain quantity of timber brought down to the coast within a given time. In the height of the monsoon the jungles are impassable, and Coolies all through the wet weather fight shy of the jungles, being afraid of leeches and other accompanying evils. The time therefore, during which floating can be safely carried on, that is to say, when there is sufficient depth of water and at the same time security from freshes, is very limited and it was particularly so this year. I expectd that *all* the timber lying in the forest depôts would have reached the coast this year, but I have been much disappointed and many logs have stranded half way down the rivers, and cannot be floated till after the next mousoon. One Contractor for floating timber came forward in the south of the district and although he has not fulfilled the terms of his contract, I do not wish to be hard on him, as these men should be encouraged to come forward and compete for the contracts. This system will leave Overseers and other Subordinates available for other duty ; and the work need not be carried on, but only supervised by the Forest Department.

6. The number of logs floated is as under :—

From Hully Bogle to Coondapore.	351 logs of Junglewood = 501 Bombay Candies. 8 logs of Blackwood = 8 Bombay Candies. 2 Boats.
From Yenecull, Neranky, etc., to Mangalore	11 logs of Junglewood 11½ Bombay Candies. 177 logs of Mangoewood= 378½ Bombay Candies. 26 logs of Blackwood = 51½ Bombay Candies. 6 logs of Teakwood = 14½ Bombay Candies. 4 logs of Jackwood = 12½ Bombay Candies. 3 Boats.
From Soolia to Mangalore.	3 logs of Ebony = 4 Bombay Candies. 1 log of Blackwood = 1 Bombay Candy.
From Maloot to Kat Kutcherry.	70 logs and planks of Blackwood = 100½ Bombay Candies.
From Parapa to Cassergode.	31 logs of Teakwood = 40 Bombay Candies. 80 logs of Junglewood = 166¼ Bombay Candies. 5 logs of Blackwood = 9¼ Bombay Candies. 1 log of Ebony = 1½ Bombay Candy.

Timber floated to half-way to the coast or distance varying from 2 or 3 to 15 miles.

From Hully Bogle to a distance of 3 miles.	117 Junglewood logs.
From Yenecull to Uppinangady.	183 Junglewood logs = 316 Bombay Candies. 26 Wild Jack logs = 74½ Bombay Candies.

7. *Timber sold.*—Owing to my unavoidable absence from the district the Annual auction sales were this year postponed, and as I did not return till the middle of this month it was too late to make arrangements for the sales taking place and the money being collected within this official year. Some timber to the extent of Rupees 4,743-12-1 was sold to private purchasers and 759 logs = 334¾ Bombay Candies to the Public Works Department from coast depôts and 135 logs = 160¾ Bombay Candies out of the jungle depôts in order to get rid of the surplus stock.

8. *Cutting creepers, etc.*—Creepers and canes were cut from the forests and utilized in rafting, sinking timber, thus at the same time benefiting the trees and saving expenditure in ropes, etc. The planted teak was thoroughly cleared and many of the natural teak trees in the Cassergode* Talook pruned and freed from surrounding creepers and grass. Timber lying in the forest was secured from fire, by the removal of grass, decayed leaves, etc., and I have not heard of the destruction of any timber by fire, though the usual jungle-fires have been as fierce as ever.

* About two lacs.

9. *Elephants and Cattle.*—As mentioned above there are no Elephants belonging to the Department, though the sum of Rupees 8,000 sanctioned for their purchase is still available. Elephants cannot be obtained in this district except at unreasonably high rates, but I think that the money might be advantageously laid out in obtaining some of these animals from Burmah, thus saving the enormous elephant-hire yearly disbursed by the Department.

10. The Buffaloes, now reduced in number by sickness and tigers as formerly reported, to nine, have been transferred to the Cassergode Range, where they are more cheaply fed and where there are good roads for them to work on. But as I have before urged, bullocks would be more useful for light-works and less liable to sickness and sores.

11. *Plantation.*—The teak plantation at Parapa in the Cassergode Talook has advanced rapidly, that part of the plantation contiguous to the river especially so. The trees are healthy and well grown, if carefully pruned will be very valuable in the course of a few years. This part might be advantageously thinned out next year, or the year after at latest, and the plantation extended on this side on both banks of the river.

12. A plantation of Jack and Teak trees has been formed at Hospett and the trees appear to thrive well. The cost of making this was very small, as Coolies who were engaged monthly but were not able to proceed to their regular work on account of rain, were employed in making the plantation, draining and fencing it in.

13. *The Department Public Works.*—Under recent orders* from Government the Department Public Works continue to fell the timber requisite for their bridges, which in this district are constructed with laterite and granite piers, and other buildings. This arrangement is much to be regretted for many reasons ; but unless some addition is made to the Forest Establishment, I fear it cannot be rectified. For the Department Public Works require timber as near as possible to the sites of their bridges, and their officers in the north of the district especially are unreasonably exacting in this respect. These places are in most I may say in all instances out of the regular beat of the Forest Overseers and peons, whose duties are arduous enough at present, owing to their small number ; and the supervision which they are required to exercise over the class of trees felled by the Department Public Works alone tells on the performance of their regular duties.

* G. O. No. 75 of 9th January 1868.

14. My chief objections to the felling of timber by the Department Public Works are the following :—

(1.) The anomaly of two Departments felling large trees in Government Forests.

(2.) The probability of wastage of timber and indiscriminate felling of trees by subordinates whose only object is to get trees of sufficient girth, etc., for the various parts of their work.

(3.) Lastly but not least the felling of trees in Kumaki land, a practice much affected by the Subordinates of the Department Public Works if general report speaks truly when they are not obtainable in Government forests. This course of procedure either tempts the ryot to sell the trees which are not his property to *sell* but only to *use* for his own purposes, or gives him a grievance in that the trees which he or his ancestors planted and reared, and upon which he depends for the supply of material for his houses and agricultural implements should be cut at all.

15. I most earnestly trust that my hands may soon be so strengthened that I may be able to resume this duty from the Department Public Works and other works which are detailed elsewhere in this report may be more fully supervised and more efficiently carried out.

16. *Timber supplied to Department Public Works.*—The timber cut by the Department Public Works and paid for at the seignorage rates settled by the Collector and Conservator, is given below :—

	RS.
179 logs of reserved timber = 217 Bombay Candies at Rupees 6 per Candy...	1,302
104 Logs of Junglewood = 182¾ Bombay Candies at Rupes 4 per Candy...	731
Total ...	2,033

17. Besides this a large quantity of timber was supplied to the Department Public Works in the Mangalore Range, for which, owing to the excess of their expenditure over their allotment they were unable to pay this year. The amount due for this therefore, amounting to about 4,000 Rupees should really be credited to the Forest Department this year, but as the receipts are not sent in, the stated receipts of the year appear less by this amount than they actually are.

18. *Catechu Farm.*—It will be observed that no revenue has been derived from this source this year at all. The Catechu Jungles have been let out on contract for a number of years, and having been worked to the utmost by the Contractors, now require rest. It was therefore considered advisable that this farm should be discontinued this year, and that the Catechu Jungles should in future be worked by the Forest Department and one or two peons detailed for this purpose.

19. ESTABLISHMENT.—*Health.*—The health of the establishment has been decidedly bad; one of my office peons died from fever, and one of Mr. Wilson's from Cholera. I had to absent myself for 3½ months from the effects of dysentry, and I suffered severely from fever in the beginning of the year. Mr. Goudie is also very weak from the effects of fever and requires immediate change, and the other subordinates have all suffered more or less from fever.

20. It may be well to recapitulate here the various purposes and duties for which an additional establishment is necessary.

(1.) For work at present carried on by the Department Public Works.

(2.) For the supervision of the Sandal-wood still contractors, which should be a separate duty and entrusted to particular men.

(3.) For the working of the Catechu Jungles.

21. Provision is made in the Budget for the pay of an Overseer and three Duffadars in addition to the Establishment as it at present stands. A fourth Overseer, however, is scarcely wanted, but it would be a great advantage if this money could be laid out on the pay of additional peons and duffadars.

22. The amount which would be available is as follows —

	RS.	A.	P.
Pay of 3rd Class Overseer	60	0	0
Travelling allowance of do.	15	0	0
Pay of three Duffadars at Rupees 10½ each	31	8	0
Ditto of two Peons at Rupees 6 each	12	0	0
Total ...	118	8	0

which I would propose to redistribute as follows:—

4 Duffadars one for each Overseer and one for head-quarter, general duty and supervision of Peons at Rupees 10 each	40
1 Goomastah at 12 Rupees, two peons at 6 Rupees for the working of Catechu Jungles, Coondapore	24
1 Goomastah at 12 Rupees, 2 peons at 6 Rupees for the supervision of the Sandal still Contractor. Udupee	24
5 Additional Peons, 1 for the Cassergode, 2 for the Uppinangady Range, and 2 for the Mangalore Office	30
Total ...	118

23. The revenue of the district is quite sufficient to meet this additional charge, and the advantages to be derived from such an outlay, such as the inducements held out to peons by the prospect of being promoted to the post of Duffadar or Goomastah, etc., etc., are sufficiently obvious. The object of Forest Conservancy, as I understand it, is to provide for the judicious management of the jungle and not the gain of a few thousand Rupees at the sacrifice of the happiness and comfort of the people generally. This object I contend cannot be attained, so long as peons and other subordinates have no prospect of promotion in the Department, and are therefore tempted to bully or take bribes as they find convenient, to add to their pay, while the fear of the loss of their post does not deter them in the slightest degree from such practices.

24. This result however does not represent the actual revenue of the year. About 6,000 Rupees due by the Department Public Works and Bombay Gun Carriage Manufactory for timber cut for them during the year have not been received, and 2,500 Rupees due by Messrs. Mann and Co., for Mangoewood, and the Catechu Jungles from which an average revenue of about 5,000 Rupees has hitherto been derived, have had complete rest this year. Thus from 13 to 14,000 Rupees actually gained, but not collected in this year, will appear in the accounts for the next official year, and with a slightly increased Establishment and moderately energetic working, a large revenue may be expected to result.

25. In forwarding the above report, I have to state that the opinions expressed are Mr. Cadell's precisely as penned by him before his departure from the district and only delayed for my signature, because the accounts required to accompany it were necessarily not ready at that date.

26. For item No. II. on the credit side of the enclosed annual account current there are no vouchers. There are no means of ascertaining whether the Rupees 9,822-10-0 therein entered represent the actual Forests receipts under this head. All I can ascertain is that they may have been more, they cannot have been less.

27. The system of accounts is altogether very lax, and in need of remodelling. This it is that has caused the delay in forwarding this report.

28. Financial Results, vide page 25, paragraph 193.

I have the honour to be, etc.,

(Signed) H. S. THOMAS,
Acting Collector, In charge of the Assistant Conservator of Forests Office.

OFFICIATING ASSISTANT CONSERVATOR OF FORESTS, MANGALORE,
8th May 1869.

APPENDIX K.

OFFICE MANANTODDY.
1st June 1869.

From

J. W. CHERRY, Esq.,
Assistant Conservator of Forests, Wynaad.

To

Colonel W. R. MORGAN,
Deputy Conservator of Forests, Ootacamund.

SIR,—I have the honour to submit the Annual Report of the Wynaad Forests for the past official year.

From the date of taking charge, I have been chiefly engaged in hunting up information regarding Mr. Turnbull's defalcations, on which separate reports have been submitted.

I have however visited the depots, and have taken stock of all the timber stored.

2. *Superintendence.*—On the 25th May 1868, this Range was handed over by the late Lieutenant Fullerton to Mr. T. N. Turnbull, who was suspended by the Officiating Conservator of Forests in his letter No. 1,139, dated 23rd January 1869.

On the 5th February 1869, I took charge of this Range.

3. *Operations.*—The amount of timber felled during the year was 2,246 cubic feet of teak.

9,633¼ cubic feet of teak were carted into depots.

2,21,864 cubic feet of teak were floated from Goondry to Hirnaudy, and 2247½ cubic feet (namely 1994 of teak 192 of blackwood, and 61½ of honey) were floated from Baigore to Hirnaudy.

4. *Land dispute.*—A claim has been made by one "Putati Nambia" to a portion of Forest near Pambray.

The Deputy Collector of Wynaad has agreed to meet me at Pambray to consider the above claim.

4. *Health.*—Fever and diarrhœa have been prevalent this year and several of the establishment have suffered.

Financial results, vide page 26, paragraph 198.

I have the honour to be, etc.,

(Signed) J. W. CHERRY,
Assistant Conservator of Forests.

APPENDIX L.

NELUMBUR, 22*nd April* 1869.

From

J. FERGUSON, Esq.,
Assistant Conservator of Forests Nelumbur.

To

Major R. H BEDDOME,
Officiating Conservator of Forests.

SIR,—I have the honour to forward the Annual Adminstration Report of the Nelumbur Forests for the official year 1868-69.

2. *Felling of Timber, etc.*—Junglewood 220 logs have been felled, of which 164 dragged and stored in the forest depots, 352 logs of timber and 14,000 saplings with 2,960 bamboos have been floated by the establishment this season.

3. *Employment of Elephants.*—Hired Elephants were employed for the above works.

4. *Cash realized and of stock.*—Cash realized and remitted to the Treasury was Rupees 12,571-5-7, and value of saplings supplied to the Department Public Work is Rupees 3,335-0-0, aggregating Rupees 15,906-5-7, exclusive of 1,400 saplings purchased by the Superintendent of Timber Depot, Carwar, for the use of the Bombay Dock yard, for Rupees 1,225 for which a transfer receipt was received on the 3rd instant after the Treasury accounts were closed. Value of stock in the market depot is Rupees 6,168-4-0, and of stock in the forest depots is Rupees 25,763-5-10 making a total of Rupees 31,931-9-10, to be accounted for in 1869-70.

5. *Plantations*—Teak seedlings planted out during the year are 1,04,000. Weeding and pruning has been prosecuted, also parasites removed from about 700 acres. For the present this pest has been nearly eradicated, but requires to be kept under. The experiment of growing dry grain and vegetables among the teak plants, sanctioned in G. O., dated 5th November 1867, No. 2,618, has been tried. In May five Parrahs of paddy, at a cost of Rupees 2-8-0, were sown over an area of fully one acre of ground : the seed germinated and grew freely enough, ripened and was cut down in October yielding thirty-eight Parrahs, and realized Rupees 8-6-0 ; deducting cost price, leaves a balance of Rupees 5-14-0. Also a few native vegetable seeds were sown, such as Cucumbers, Pumpkins, Chillies, and Brinjals : the two latter turned out badly, but the former ones succeeded much better in producing vegetables which were distributed among the establishment who, I dare say, helped themselves to them and dry grain as well , however the site being isolated in dense jungle, both grains and vegetables suffered from wild game. The Teak seedlings planted among the grain have not grown well, having a scared sickly appearance, and not averaging more than nine inches in height ; whilst those otherwise planted average twenty, and numbers as much as forty inches ; the contrast is very marked.

6. *Experimental planting of Blackwood and other Jungle timber.*—Of Blackwood seedlings 12,000, Erul 4,000 and Kurimurda 400. *Carkoor Ghaut Timber.* Of Irrimbogum or Hopea Parvifloria 25, Kaka Marum or Deptracorpus Indicus 630, Keeri Marum or Hopea 520, also of

Belgam Walnuts 36, from seed sent by Major Beddome, Conservator of Forests, the seed germinated freely and after planting out gave fair promise of success till the rains ceased, when they drooped gradually and during March nearly all were dead, even watering was tried but without success. Of the three former sort a few have survived, but the others are in a decided failure and seemingly require shade when young, and on the Ghauts they grow to an enormous size.

7. *Trespass.*—None requiring particular report has occurred.

8. *Demarcation and Survey.*—A portion only of the forests have been demarcated and surveyed this season, the block surveyed comprises the plantations adjacent to Nelumbur and natural forests due north, extending North-east 7 miles and North-west six miles, making a boundary circuit of 22½ miles at a cost of Rupees 586-6-11 expended in cutting traces and supplying boundary stones. The Survey Party had suffered from fever and left for the Hills in the latter end of March purposing to return after the rains have ceased.

9. *General Remarks* —This year sales have slightly improved although not quite what was expected, but still as the Bombay market recovering from its depression we may expect increasing demand for our stock, high rates for tonnage is still felt, of 1400 saplings sold to the Bombay Dock Yard, from the opening of the season 200, only have been shipped up to date supplied from Bombay, the lowest rate of tonnage at Calicut was 12 Annas per sapling all around or nearly cost price, this doubtless bars speculation in that direction, and confines the demand to Arabs, Cuchees and traders from the Persian Gulf who bring in their respective country produce for sale to our coast, where in return they purchase goods to trade within their own ports and purchase saplings as top loading and is increasing in demand.

10. *The establishment have floated* 352 *logs of timber and* 14,000 *saplings.*—Labour rates high and supply limited, till after the proper season, no doubt undue influence bearing on the establishment is the chief cause, which I trust will give way and that the old stock in forests depots may be got rid off this season, and until this is effected, felling operations are greatly curtailed. An Overseer in the establishment has been entertained, sanctioned in G. O., dated 5th November 1867, No. 2,618. A Mr. Hodgson was transfered to this range from Salem, he proved equally unsuitable as at Salem, and in fact should never have been sent here. His services were dispensed with at the close of the year and a Mr. Newman Junior from Wellington nominated to the post, he has youth and energy on his side and I trust will turn out a good hand. In training foresters, we were unsuccessful in our first attempt with the lad James Fowler from the Lawrence Asylum who came in July to undergo a three months probationary course preparatory to employment in the Ganjam District. *Vide* Proceedings of Revenue Board, No. 4705, dated 25th June 1868, ordered back to the Lawrence Asylum by the Officiating Conservator as unsuitable, and especially his probation term being short, on this point I respectfully beg to record my opinion that from the class of young lads in this country likely to be put under training, a course of one or two years is necessary to acquire a general knowledge of technical operations, each being performed in its respective season in rotation, extended over the twelve months, and seen once or twice in progress, will afterwards be simple and give young men greater confidence when put in charge for themselves, than never having seen it at all. No doubt education and natural aptitude make cases exceptional.

11. I regret to have to notice, fire having got into the plantations and also two timber depots causing an estimated loss of Rupees 5,404, no reason can be given as to its origin, the adjoining jungles having been previously burned and the fire traces prevented its entering the plantations. Apparently, the fire proceeded from the depots situate on the River Bank where local report says, some natives passing by had cooked their rice and left the fire unextinguished, which had spread all over the place and everything being so dry would burn with great rapidity. The Collector, Sub-Collector and Talook Tahsildar have inspected the place, the latter prosecuting further enquiries.

12. My establishment, I am sorry to say this year has been very insubordinate and disorganized although drawing the increased salary kindly allowed by Government. However I hope to have others who will appreciate the posts and act accordingly. My present writer V. Appavoo Pillay

joined the office in September last, and I have every reason to be satisfied with his abilities and trust he may continue to do well.

13. Operation :—

Seedlings planted	No.	104
Weeded	,,	3,350
Pruned	,,	39
Parasites removed	,,	700
Site for fresh planting felled	,,	57
,, ,, burned	Acres.	15
Timber logs felled	,,	220
Do. dragged...	No.	164
Saplings felled	,,	20,000
Do. collected	,,	2,000

Financial Results, vide page 27, paragraph 208.

(Signed) J. FERGUSON,
Assistant Conservator of Forests.

ORDER THEREON, 7th October 1869, No. 2,742.

1. BEFORE proceeding to review the administration of the Forests during the past official year, the Government desire to draw the attention of the Officiating Conservator to certain improvements in form of which the Reports, as now submitted, are susceptible, and to sketch briefly a plan on which they should be re-modelled for the future.

2. Major Beddome's Report under review is merely a condensed statement of operations and results under the head of each range. The Returns received from the various range officers, are not embodied in an Appendix, as has hitherto been usual. This important omission should be rectified hereafter, and, in place of an Abstract, the body of the Administration Report should be composed of a carefully considered Synopsis of the year, written by the Conservator himself, and drawn up more with an eye to generalization than topographical detail. It might, with advantage, be arranged under the following heads :—

I. Inspection tours of the Conservator.
II. Plantations and nurseries.
III. Reserved forests.
IV. Forests worked under the License and Voucher-system or by leases.
V. Yield of the forests.
VI. Contemplated operations.
VII. General remarks in which the progress made during the year should be specially noted.
VIII. Financial results.

It is only by following a scheme such as this, that the Conservator can give the Government the full benefit of the experience which he has drawn from various districts.

3. The financial results under the head of each range, after being checked by the Conservator, will appear in the Appendix. But hitherto the expenditure for the year has not been given under the various heads of felling, planting, etc. This should be done for the future, in order that deficits, when such occur, may be satisfactorily accounted for.

4. The total financial result of the year is a net profit to Government of Rupees 51,051 against Rupees 67,624 in 1867-68. The former amount has been materially reduced by the defalcations of Overseer Turnbull.

5. On the whole, and with the notable exception of the Neilgherries, planting operations during the year have proved a failure. The Government view this fact with much concern, and hope that the next year will exhibit an improvement. The planting of indigenous trees was attempted in the jungles of Nellambur, but unsuccessfully. Failure in most instances is attributed to exceptional drought, and for this reason more prosperous results may be reasonably expected in future. As yet but few district possess fuel-reserves, Colonel Morgan, who was unable to find a site at Cauveripooram, has been more successful at Bhowani, and it is to be hoped that the formation of a fuel-reserve in the Bhowani range, which has been long under abeyance, will soon be carried out. The Government have already urged upon the Officiating Conservator the vital importance of conserving the natural firewood-supply, and supplementing it by artificial plantations, with the view of meeting

the requirements of the railway. In the ranges of Goomsoor, South Arcot, Tinnevelly, the Annamalays, and the Wynaad, nothing appears to have been done towards re-production. If this be really the case, the omission deserves the notice of the Officiating Conservator. In Seegur, Bhowani, and Collegal, some progress has been made with Sandal-wood plantations. The extension of this remunerative timber should be pushed on with celerity in all tracts where it is found to thrive. In Kurnool the teak plantation proved a failure, but Mr. Sheffield has established a very good plantation for avenue purposes. Generally speaking, the impression left by Major Beddome's Report is, that re-production has not been adequately promoted. The Government trust that the Officiating Conservator will inculcate upon his subordinates the necessity, which has now become urgent, of attending to this most important branch of forestry.

6. In the ranges of Goomsoor, Cuddapah, Kurnool, North Arcot, and Tinnevelly, the License and Voucher-system is still retained. The formation of reserves, however, appears to be contemplated in Kurnool, and the Government recently sanctioned the demarcation for this purpose of a tract on the Nullamallays. It is matter for regret that the departmental working. which has lately been introduced into the Trinomallay Talook of the South Arcot District, has not proved popular, and the Government would be interested in hearing the causes of dissatisfaction.

7. The administration of the Golcondah forests, which is vested in the Collector, does not appear to be energetically conducted. The receipts which are very small and much less than those of the preceding year, are more than doubled by the expenditure. In 1865 Mr. Carmichael spoke highly of the timber-producing qualities of these forests. The Collector of Vizagapatam will now be called upon for a report on their present condition.

		1867-68.	1868-69.
		RS.	RS.
Golcondah	Receipts ...	1,347	377
	Expenditure	1,238	904

8. With reference to para. 91 of the Report, the Acting Collector of Coimbatore has already been requested to expedite the demarcation of the forest-land, for which a Cowle Puttah was granted by a former Collector, and which is now in the possession of Audoo Sait. It is hoped that Mr. Sullivan has, by this time, succeeded in placing the settlement of this long-pending question upon some definite footing.

9. The importation of English and Australian trees to the Neilgherries has evidently engaged a large share of Major Beddome's attention. The Government have read with interest this portion of his Report, and desire to place on record their appreciation of the botanical knowledge which he has brought to bear in developing the resources of the hills.

10. Major Beddome's proposals for checking the destruction of the Catechu-tree in South Canara, are doubtless well grounded.

11. The remaining questions mooted by the Officiating Conservator, are either now under the consideration of the Government, or have been already disposed of.

(True Extract.)

(Signed). R. A. DALYELL,

Acting Secretary to Government.

GAL SECRETARI
REPORT
RARY.

OF THE

CONSERVATOR OF FORESTS,

FOR THE

OFFICIAL YEAR

1869-70.

MADRAS:
PRINTED BY H. MORGAN, AT THE FORT ST. GEORGE GAZETTE PRESS.

1870.

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APPENDIX.

A. Golgondah Forest Report.
B. Gumsur Forest Report.
C. Cuddapah Forest Report.
D. Kurnool Forest Report.
E. North Arcot Forest Report.
F. and **G.** Salem Forest Report.
H. and **K.** Madura and Tinnevelly Forest Report.
L. and **M.** Anamallay and Bolumputty Forest Report.
N. O. P. and **Q.** Mudumallay, Seegur and Suttiamungalum, Bhowani and Collegal Forest Report.
R. South Canara Forest Report.
S. Wynaad Forest Report.
T. Nellumbur Teak Plantation Report.

OFFICE OF CONSERVATOR OF FORESTS,
CAMP OOTACAMUND, 1*st June* 1870.

From

MAJOR R. H. BEDDOME,
Officiating Conservator of Forests,

To

R. A. DALYELL, ESQ.,
Acting Secretary to Government, Revenue Department,
Fort Saint George.

SIR,—I have the honour to forward the Annual Report of my department for the year 1869-70.

2. I will proceed to treat upon the administration under the following Sections:—

A.—Inspection tours of the Conservator.

B.—Plantations, Nurseries, and Fuel Reserves, and contemplated operations therein.

C.—Reserved forests and contemplated operations therein.

D.—License and Voucher forests and contemplated operations therein.

E.—Yield of the forests for the year and expenditure on felling and carrying timber to depôts.

F.—General remarks.

G.—Financial results.

3. SECTION A.—*Inspection tours of the Conservator.*—I. Towards the end of May I visited the Wynaad forests, and as I was detained in Wynaad the whole of June investigating Mr. Turnbull's case, I made several excursions into these forests, and took the opportunity of going thoroughly into the question of their working and conservancy with Mr. Cherry, who had lately been appointed to this range.

II. In the beginning of July I visited Nellumbur, and inspected all the plantations with Mr. Ferguson, the Assistant Conservator in charge.

III. On the 20th of the same month I proceeded with Lieutenant-Colonel Morgan on an inspection tour through the Mudumallay and Soegur forests and thence on to Collegal. All the depôts were carefully examined; and we made numerous excursions into the interior of the forests, and thoroughly inspected all operations. When in the Collegal range I took the opportunity of crossing over the higher ranges of the Balarangams (about 6,000 feet high), which were of considerable interest botanically, and, at the request of the Mysore Government, I inspected their Cinchona plantation on these hills.

IV. At the beginning of August I left Collegal and inspected the *Bhowani forests* and all the tract of forests along the Burghoor river, and the banks of the Cauvery above Cauverypooram, and thence down to Erode, and considered the

question of Railway fuel plantations and floating operations, etc., on which separate reports have been forwarded to Government.

V. At the end of August I proceeded to the Anamallays, and was employed with Captain Gosling in inspecting the depôts in this range and felling operations, etc., until the 11th of September. I then proceeded to Salem, and was employed till the 17th in the inspection of the forests, reserves, and plantations in this range with Mr. Cadell, the Deputy-Conservator. I then proceeded to North Arcot, and inspected the Casuarina plantation with Mr. Yarde, the Assistant of the district; thence, after a visit of four days to the Central Office at Madras, I proceeded up the North-West Line, and inspected the plantations in the Cuddapah and Ghooty districts.

VI. On the 26th of October I started from Ootacamund for a tour through South Canara, and, proceeding through the Wynaad forests and Coorg, I met Mr. Winter, the Assistant Conservator lately appointed to this range, at Mercara on the 3rd of November. We first inspected the Sampojee and Sooliah forests and the Teak plantations at Parapa, and then proceeded down to the depôts on the coast at Casergode, and thence through Mangalore to Bellatangady to meet the Collector. From Bellatangady we visited the ghaut-forests at Nagoor, and thence all along the range as far as Coloor, making numerous excursions into the forests, and visiting all the depôts, etc. From the forests above Coloor we came down to Condapore, and, visiting all the depôts between that and Mangalore, reached the latter place on the 5th of December. I then proceeded to Beypore, and examined our depôts at that port, and thence to Bolumputty, and spent three days in the hill-forests of this range.

VII. On the 4th of January I visited the Central Office at Madras for a few days, and proceeded on the 8th by rail and dâk to the Kurnool range. I inspected the depôts here with Mr. Sheffield, and spent three days with him up in the reserved forests of the Nallaymallays.

VIII. On the 18th, having returned to Madras, I left by steamer for Vizagapatam, and proceeded on a tour through the Golcondah hill-forests in this district. This range had not previously been explored, and my report on the tour has been separately submitted, and will be found in Appendix A. I returned to Madras on the 16th of February.

IX. On the 13th of March I visited the Anamallay range, and went over the depôts and forests up at Ponachy and at Toonacadavu with Mr. Douglas, who is about to relieve Captain Gosling, and who is being initiated into his duties in this range. I was summoned to Madras on the 25th, or it was my intention to have proceeded on to the Madura range.

4. Section B.—*Plantations, Nurseries, and Railway Fuel Reserves, and contemplated operations therein.*

5. *Gumsur and Surada.*—A small experimental plantation and nursery were commenced in this range last November, and teak and various other trees were sown and planted out. Planting is not necessary in this out-of-the-way range, and this plantation is only intended for experiments and the instruction of the subordinates in the department.

6. *Cuddapah.*—There are five plantations under the officer in charge of this range, namely, *Reddipally*, *Codoor*, *Ooperapally*, and *Cumalapooram* in the Cuddapah district, and the *Ghooty* plantation in the Ghooty district.

7. *Codoor Red Sanders plantation.*—This is situated on the bank of a river about quarter of a mile east of the Railway station of the same name on the North-West Line; it is 50 acres in extent, and is surrounded by a bank topped with an aloe-fence. It was commenced in January 1865 by Mr. Yarde, the Forest Officer of the range, chiefly for Red Sanders *(Pterocarpus santalinus)*, a small tree yielding a valuable dye-wood, found only in this district, North Arcot, and the most southern limits of Kurnool. Nearly the whole area is now planted up, and this year Mr. Yarde has commenced experiments on the growth and cultivation of all sorts of timber-trees, indigenous and foreign; and he has been directed to make this plantation a school for the Overseers in his range and others that may be sent to his district for training.

8. The Red Sanders seeds are collected in May, and sown in June or July, and, having been previously soaked in water twenty-four hours, germinate in about twenty-five days; unsoaked they take about thirty to forty days to germinate. The seed-beds are watered twice daily. The growth was very slow for the first three or four years; but during the last two years they have taken a great start, and many are now upwards of 20 feet high, with a girth of 12 inches. Several severe seasons of drought have occurred, which have caused casualties, and the re-placing of these have somewhat added to the expenditure, but this must occur more or less in all plantations in the plains. The trees are generally only watered for one year after transplantation.

9. There are 10,000 Red Sanders trees, planted out into pits, and 5,520 other trees, and the nursery is well stocked with seedlings, of all the different species for re-placing casualties; and *Pithecolobium Saman*, *Pithecolobium dulce*, and *Acacia Arabica* have been sown in trenches at 15 feet apart—a plan now adopted in Bengal—and have germinated well.

10. The *Pithecolobium Saman*, a tree of rapid growth from Central America, is a valuable introduction, and our department is indebted to Mr. Thwaites, Director of the Peradenia Gardens in Ceylon, for the seed, and he forwarded it as a tree likely to be of great value for Railway fuel. It is known in Mexico as the Genisaro tree, and the specimen is described in Squier's "Central America" as 90 feet high, with some of the lower branches quite horizontal, and 92 feet long, and 5 feet in diameter; the stem at 4 feet above the base, 21 feet in circumference, and the head of the tree describing a circle of 348 feet.

11. The following is a list of trees planted out in this plantation:—

Pterocarpus santalinus.	Albizzia Lebbek.
Tectona grandis.	Adenanthera Pavonina.
Cassia florida.	Sandal.
Shorea laccifera.	Vengay.
Nim.	

12. The following statement shows expenditure since the commencement, of which sum Rupees 966-9-9 were expended in 1869-70:—

	Rs.	A.	P.
Plantation working charges	2,781	0	8
Seeds	21	6	0
Fencing	134	9	6
	2,937	0	2

13. *Contemplated operations.*—There are about 23 acres of land on the opposite bank of the river suited for planting, and if we can obtain this block, it is proposed to extend the plantation. Experimental sowing and planting will be carried on, and casualties re-placed.

14. *Ooperapilly plantation.*—This plantation is situated seven miles east of Codoor, and close to the line of Railway. The land was formerly covered with small jungle, but having been cleared by the Locomotive Fuel Contractors, it was selected for a plantation in August 1868; it measures 62 acres, and is all fenced round.

15. After the land had been ploughed up 50 measures of Babul *(Acacia Arabica)* seed were sown broad-cast. The seed germinated, but the plants all died away from the heat and want of water; and it is doubtful if this system will ever answer, except in exceptionally favourable seasons. Nursery beds were then formed and protected by temporary pandals, and different kinds of trees were sown, and watering was carried on systematically. Nearly 4,000 young trees have been planted out into pits, and are doing well; and 1,087½ chains of trenching were dug, and seed of *Acacia Arabica* (Babul), *Pithecolobium dulce* (Kakapilly), and *Melia Azadirachta* (Nim) were sown in these trenches; all these germinated in from ten to fifteen days, and the young trees look well.

16. The following is a list of trees planted out:—

Pterocarpus santalinus.	Terminalia Belerica.
Melia Azadirachta.	Albizzia Lebbek.
Adenanthera Pavonina.	Diospyros (species).
Tamarindus officinalis.	Santalum album.
Guazuma tomentosa.	Tectona grandis.
Anogeissus latifolius.	Acacia Arabica.
Dalbergia sissoo.	

17. The following statement gives expenditure from the commencement:—

	RS.	A.	P.
Plantation charges...	883	4	6
Channelling...	407	13	6
Fencing	216	5	6
	1,507	7	6

of this sum Rupees 1,024-4-6 were spent in 1869-70.

18. *Contemplated operations.*—The whole of the present plantation is planted up, but casualties will have to be re-placed from the nurseries; it is also proposed to extend the plantation by taking in a block of 40 acres (adjoining waste land).

19. *Reddapilly plantation.*—This plantation contains about 500 acres, and is situated on the North-West Railway Line about two miles from the station of Reddapilly. The soil is very poor. Operations were only commenced at the latter end of last October, when 761¼ chains of trenches were excavated, 638 of which were sown with Babul, Nim, and Kakapilly, which germinated in from fifteen to twenty-five days. A nursery has also been formed, and about one acre has been planted up on the pit-system, which is, however, more expensive than the trench-system.

20. The expenditure for the year has been as follows :—

	RS.	A.	P.
Plantation operations...	209	14	0
Seeds...	5	12	0
Channelling	285	7	6
	501	1	6

21. *Contemplated operations.*—Sowing in trenches will be carried on during the ensuing year, and the nursery kept up to re-place casualties.

22. *Camalapore plantation.*—This plantation is close to the Railway station of the same name on the North-West Line beyond Cuddapah; its extent is 249 acres, and operations were commenced in May 1869. Large nurseries have been formed, in which there are about 40,000 seedlings and upwards of 13,000 young plants of *Albizzia speciosa;* the *Nim* and *Pithecolobium dulce* have been planted out. In the nurseries we have also the *Garcinia Livingstonii*, *Sterculia colorata*, *Cassia florida* and *Cananga odorata*, and a few of these have been planted out. Of the young trees put out about one-fourth have succumbed to the heat and drought.

23. Thirteen acres of Babul were sown broad-cast, but the germination has been indifferent.

24. 2,189 chains of trenches have also been excavated, and have just been sown with Babul.

25. The expenditure has been as follows :—

	RS.	A.	P.
Plantation charges...	502	10	0
Fencing	183	12	0
Channelling	569	11	0
Seeds...	20	4	0
Paid for land	97	14	11
Salary and travelling allowance of the Overseer who has also charge of the Ghooty plantation.	1,100	0	0
Maistry, gardeners, etc.	253	5	9
	2,727	9	8

26. *Ghooty plantation.*—This is within a mile of the Ghooty Railway station; its extent is 404¾ acres, and it is surrounded with a bank and aloe-fence. The site was handed over to our department in May 1869. Very large nurseries have been formed, which now contain about 80,000 seedlings; and about 15,000 young trees (chiefly Nim) have been planted out into pits, of these, however, about one-fourth have already died.

27. Twenty acres of land were sown with Babul broad-cast, and the seed germinated, but the success is still doubtful.

28. 1,492 chains of trenches have been excavated, and 81 chains were sown with Babul.

29. A great number of different trees are at present in the nurseries, but it is not expected that any, besides the Babul and Nim and perhaps the Pithecolobium, will answer, as the soil contains much salt.

30. The following is a statement of the charges incurred from the commencement :—

	Rs.	A.	P.
Plantation charges...	873	8	8
Fencing	367	5	0
Purchase of land	826	0	0
Seeds...	15	12	0
Establishment, gardeners, etc....	302	0	0
	2,384	9	8

31. There is one reserve, namely, the *Balapilly Railway Fuel Reserve.* There is a Railway fuel reserve of 600 acres near Balapilly. It is all fenced in, and is under the charge of two watchmen. Much of the timber had been felled out of this tract before it was reserved and fenced in, and the gaps are now being planted up from a nursery. The improvement in the growth is already very marked since cattle have been excluded.

32. The expenditure for the year has been Rupees 144.

33. KURNOOL.—*The Nallaymallay Teak plantation.*—The small experimental Teak plantation lately commenced on the Nallaymallays, and reported last year as a probable failure, is, I am glad to say, likely to succeed after all. I was agreeably surprised last January to see that the trees had taken quite a start; I have therefore had ten to fifteen acres more of the adjoining jungles felled and prepared for the coming season. Nursery-beds have also been prepared, and operations will commence in May. The expenditure for the year has been Rupees 164.

34. *Woncarum plantation.*—A small plantation for Sandal and Red Sanders has been commenced at Woncarum, close to the foot of the hills. Fifteen acres of ground have been prepared, and a nursery of half an acre is ready, in which Sandal seed has already germinated. It is proposed to plant five acres with Sandal and ten acres with Red Sanders as a commencement.

35. The total expenditure has been as follows :—

	Rs.	A.	P.
Digging a trench 5 feet by 5 feet round nursery, fencing and preparing seed-beds	65	0	0
Felling and preparing fifteen acres	46	0	0
Monthly pay of gardeners	66	0	0
	177	0	0

36. *Nurseries.*—At Nundyal we have a good nursery of young trees for avenue purposes. The following trees are growing in the nursery-beds and bamboo pots and baskets ready for planting out :—

Tamarind	about...	500
Nim	,, ...	200
Albizzia Lebbek	,, ...	200
Adenanthera Pavonina	,, ...	1,000
Millingtonia hortensis	,, ...	50
Mango	,, ...	50
Pomciona regia	,, ...	200
Bassia latifolia	,, ...	200
Casuarina	,, ...	200

37. The expenditure for the year has been Rupees 168.

38. *Contemplated operations.*—Plantations for fuel or, in fact, for any sort of timber, except Teak, Sandal, Rod Sanders, etc., would not pay in this district, and are not required at present. The yield of the Nallaymallay forests is far beyond the annual demand.

39. *North Arcot.*—There are two plantations in this range, namely, *the Trivellum Casuarina plantation and the Ammerdy plantation.*

40. *Trivellum Casuarina plantation.*—This plantation is within a mile of the line of Railway at Trivellum, eight miles east of Vellore, and is situated at the confluence of the Poiney and Palar rivers. The tract is entirely sand, with water near the surface, and is admirably adapted for the growth of Casuarina. It was commenced by the Collector of the district in 1867 as a famine-work, and 198 acres were enclosed, and 18,000 Casuarina plants put down. On the 1st of January 1868 it was handed over to our department, and the plantation was subsequently enlarged by the purchase of a further tract of 160 acres at a cost of Rupees 861-10-9. It now consists of 358 acres, and is all properly fenced in; and there are 52,310 Casuarina trees planted out, besides a few trees of *Albizzia Lebbek* and *Cassia florida*, and there is a large stock of seedlings in the nurseries.

41. The following is a statement of the expenditure from the date of our taking over charge :—

	RS.	A.	P.
Plantation working charges	4,067	9	6
Purchase of land...	861	10	9
Seeds	28	0	0
	4,957	4	3

of this amount Rupees 1,838-6-4 were spent during the year under review.

42. The Casuarinas are all planted out either by 12 feet by 12 feet or 15 feet by 15 feet.

43. Including the purchase of the land, the trees have only cost about 1¼ Annas each; it is calculated that they will be worth as fuel on an average Rupees 1-8-0 each in eight years from the date of being planted.

44. The young trees have to be watered occasionally during the first year; but when the whole tract is planted up, which is now nearly accomplished, the expenditure will be very trifling. Casuarina planting is very easy, and far less precarious than any other planting in the plains. Care only has to be taken that the roots of the seedlings are not injured in lifting them, and that the holes in the sand are sufficiently large for the roots to be put in without being doubled up or twisted in any way. If this is attended to, and the young plants are shaded and watered at first when the weather is dry, very few casualties occur. It is never necessary to establish them under shade after removal from the nursery-beds previous to planting out, nor is it even necessary to take them up with a ball of earth or sand attached to their roots; and all the planting operations being in sand, pitting is easy and inexpensive, and there are no weeds, grass, or jungle to keep down.

45. *Contemplated operations.*—This tract is nearly all planted up, but it is intended to extend these operations by taking up another tract north of the Railway bridge at Trivellum and a tract at Veerinjeepoorum; a plan of the latter

was made a long time ago, but we have not had the assistance we might have expected from the Revenue authorities in the matter.

46. *The Ammerdy plantation.*—This is an experimental plantation of 30 acres, situated sixteen miles south-west of Vellore, and is divided into two blocks by a river. Operations were commenced in September 1867. Casualties have been numerous, owing to the very bad seasons experienced in 1867 and 1868; but at the date of this report 4,834 trees of various sorts are standing in the plantation, and very fairly established, and there are a large quantity of seedlings in the nursery:—

47. *List of Trees cultivated.*

Cassia florida.	Melia Azadirachta.
Terminalia tomentosa.	Ficus Indica.
Mangifera Indica.	Engenia Jambolana.
Guazuma tomentosa.	Cassia fistula.
Santalum album.	Casuarina equesitifolia.
Pterocarpus santalinus.	Pithecolobium dulce.
,, marsupium.	Anogeissus latifolius.
Albizzia speciosa.	Emblica officinalis.
Tamarindus officinalis.	

48. Expenditure from the commencement has been Rupees 1,430-15-10, of which Rupees 866-2-6 were spent during the year.

49. *Contemplated operations.*—Experimental cultivation of different species of trees.

50. *Salem plantation.*—There are two plantations in this range, namely, *the Mullapooram Fuel plantation* and *the Putchoor plantation*; the extent of the former is 320 acres, and it is situated close to the line of Railway at Mullapooram. About 100 acres have been sown with Babul *(Acacia Arabica)*, and some of this is now doing well, and the plants are from 6 inches to 3 feet high. There is also a nursery well stocked with Babul plants, *Cassia florida*, *Nim*, etc., and planting out in trenches and pits has been carried on during the year.

51. The expenditure for the year has been Rupees 842-7-3.

52. The Putchoor plantation was only commenced in 1869. It is in the Tripatore talook on the Bangalore branch of the Railway and nine miles from Jollarpett. Its extent is 9½ acres, and 3,800 pits have been dug, which are to be planted with Babul.

53. Several years ago a plantation was commenced on the Shervaroy Hills, but the site was not well selected, and it is not now intended to extend this or keep it up as a plantation, but it will be retained as a nursery for the experimental propagation of different trees. The elevation is about 4,200 feet. The expenditure in this during the year has been Rupees 278-8-10. There is also an experimental nursery at Salem (elevation 700 feet), in which the expenditure for the year has been Rupees 97-4-8.

54. *Reserves.*—There are five large fuel reserves in this district, namely:—

55. *Reserve A.*—A tract of 2,560 acres (or 4 square-miles) of jungle on the line of Railway between Mullapooram and Ahtoor, which has all been fenced in. Expenditure for the year, Rupees 329-2-3.

56. *Reserve B.*—A tract of 964 acres of jungle; all fenced in on the line of Railway between the same stations. Expenditure for the year, Rupees 60.

57. *Reserve C.*—A similar tract, measuring 320 acres, between the same stations partially fenced in. In this reserve 45,022 square-yards of ground and 750 running yards of trenches have been planted with Babul during the year. Expenditure for the year, Rupees 99-10-9.

58. *Reserve D.*—A similar tract of 1,600 acres; all fenced in near Jollarpett on the Bangalore branch.

59. *Reserve E.*—A similar tract of 2,400 acres; all fenced in near Jollarpett on the Bangalore branch.

60. Expenditure for the year on the two latter, Rupees 120.

61. Reserves A., B., and C. had been much felled in before they were fenced in and formed into reserves; they require six or eight years' rest, and are supplemented by nurseries. The increased rate of growth since cattle have been excluded has been very apparent.

62. Reserves D. and E. will be fit for felling in about three years. All these reserves will be re-planted as they are felled.

63. *Contemplated operations.*—The Mullapoorum plantation will be extended, and the planting up of the reserves attended to. Greatly extended planting operations are necessary in this range, but must depend upon the sanction of Government and on an increase in superintendence. Propositions are before Government.

64. *South Arcot.*—There are no plantations in this range, but seven fuel-tracts have been formed into reserves, and roughly demarcated at a cost of Rupees 184-6-0. They contain an area of 11,500 acres, or nearly 18 square-miles; they have not as yet been fenced in; they are intended to meet the requirements of the Railway, if it should enter this district, and are also available for the supply of Pondicherry with firewood.

65. *Contemplated operations.*—There are several tracts very favourable for the growth of Casuarina, and plantations of this tree are in contemplation, but must depend upon an increase in supervision, and cannot well be undertaken unless a separate Assistant or Sub-Assistant is nominated to this range.

66. *Madura.*—Three plantations have been commenced in this district, namely, *the Cumbum plantation*, *the Pulney Hills Firewood plantation*, and *the Pulney Hills Eucalyptus plantation*. The two latter authorized in G. O., No. 3,102, of the 3rd December 1869.

67. *The Cumbum plantation.*—This is situated at Vannathypara at the foot of the hills, at the head of the Cumbum valley, and seven miles from the village of Cumbum. A nursery has been formed and enclosed, and 9,500 square-yards of jungle cleared for planting. 1,050 pits dug and 1,050 young Teak trees put out, which are reported to be doing well, and to average from 1½ to 2 feet. 3,000 Teak saplings remain in the nursery, ready to be put out with the first rains in June next. Teak seed is ready for this year's sowing, and Vengay and several other trees will be tried. The total cost of this plantation up to 31st March 1870 has been Rupees 341-9-7.

68. In the two Pulney Hill plantations no plants have as yet been put out, but nurseries have been formed, and 4,500 pits have been dug. The land for the

Eucalyptus plantation cleared, and the irrigating channels constructed. Most of the Eucalyptus seed that was first put down was killed by the frost, which was owing to inattention in not shading, etc.; but subsequent batches of several different sorts have been sown and seedlings will be ready for transplanting in June or July. The cost up to 31st March 1870 has been Rupees 178-2-4.

69. *Contemplated operations in planting.*—An extension of the three plantations will be carried out, and it is also proposed to form extensive fuel-reserves of existing jungle and forest-tracts in the Karandah Mallays, the Nattam Hills, etc.; these are very necessary for the Railway, but operations must much depend upon increase of superintendence and establishment. Proposals for which are before Government.

70. TINNEVELLY.—There are no plantations in this range. A small Teak plantation is in contemplation, but must depend upon the appointment of an additional Assistant Conservator for this range.

71. ANAMALLAYS.—There are no plantations in this range. An experimental Teak plantation of about 2 acres was formed in 1860, but was not subsequently kept up owing to scarcity of labour, fever, and the impossibility of any one living above ghaut during several months in the year. It became over grown with jungle, and has several times been run through by the fires; and although some of the trees are still standing, and a few are healthy and well grown, it does not deserve the name of a plantation.

72. *Contemplated operations.*—Circumstances have much altered during the last few years, and Teak planting on a considerable scale should now be commenced on these mountains. The low-land jungles have lately been cleared nearly to the base of the mountains, and although a few years ago a residence during the unhealthy months at the village of Anamallay, eight miles from the foot of the ghauts was attended with certain fever, our Overseers are now enabled to reside within two miles of the foot. It is therefore proposed to commence plantations in the Government forests (proper) about the head of the ghauts. There are large tracts of bamboo land well adapted for planting, at an elevation of from 2,000 to 2,500 feet. I intend therefore to apply for sanction for the services of an Overseer exclusively for planting, and 50 or 100 acres should be cleared during the ensuing year, and nurseries, etc., got ready for planting out in June 1871.

73. A Teak plantation on the Anamallays has long been a *desideratum*, and will be of the greatest interest if only for comparison with Nellumbur. The growth will probably be far less rapid, but finer and larger timber will, I am convinced, be eventually obtained.

74. BOLUMPATTY, SHOLAY KARAY, AND CHENAT NAIR.—There is a large fuel-reserve in this range, namely, the *Walyar Fuel-reserve*, but no plantations.

75. *Contemplated operations in planting.*—A small block of 18¾ acres has been marked off in a valley on the Sholay Karay Hills, and will be planted with Teak during the ensuing year.

76. Another block in the same valley of about 300 acres, containing 3,000 Teak and Rosewood saplings (spontaneous), will be fenced in, and supplemented with a nursery and artificial planting.

77. *The Walyar Fuel-reserve.*—This is parallel with the line of Railway near Walyar; it is an area of 970 acres of spontaneous jungle and forests, and is fenced

in with an aloe-fence to the east and west, and bounded on the north by a range of hills and to the south by the line of Railway. It was enclosed in 1868, and ever since cattle have been excluded, its growth and improvement have been very marked. It has this year been supplemented with a nursery and artificial planting, and 6,000 young trees have been put out in pits, and some broad-cast sowing was attempted. This has not been so successful as could be wished, and a great many of the plants have died, but experience has been gained. Its cost up to 31st March 1870 has been Rupees 3,147-3-2 ; of this sum Rupees 2,692-2-11 was expended in 1868-69, (which included Rupees 1,280 paid for a portion of the land, and 1,100 Rupees paid for trenching and fencing,) and Rupees 455-0-3 in the current year. Rupees 897-8-0 have been realized during the year under review by the sale of fuel and grass out of the reserve.

78. *Mudumallay.*—There are two Teak plantations in this range, namely, one, at Mudumallay and one at Benni. The elevation is about 2,500 feet.

79. *Mudumallay and Benni Teak plantations.*—Planting was commenced in 1863, and from that date to this 25 acres have been planted. The largest trees are 30 feet in height and 12 inches in circumference at 5 feet from the ground. This rate of growing may be considered favourable, considering that the climate is not nearly so forcing as that of Nellumbur, which, indeed, may be considered as one of the most forcing climates in the world. Last year (1868) it was considered advisable to plant ten miles farther west in Wynaad beyond the bounds of Mudumallay for the following reasons :—

1st.—The trees have a straighter and rather more rapid growth owing to the greater rain-fall.

2nd.—The Nellumbur Rajah had inserted in the Mudumallay lease very stringent and vexatious clauses with regard to planting, such as thinnings to be made over to him; a stump fee of one Rupee eight Annas to be paid him on every tree cut for timber. By planting ten miles west of Mudumallay we escape these conditions, secure a better climate for the Teak tree, and have only to pay one Anna six Pies per cubic foot more for carriage. In 1868, 10 acres were felled and cleared to be planted in July 1869. Nurseries were made, but unfortunately out of 20,000 plants all were destroyed but 2,000 ; these were planted out, and are doing well. The cause of failure was due to the Mealy bug. This insect attacked the tap roots of the young plants, and destroyed them by thousands. Ashes were placed around the roots, and 2,000 plants were saved. There was no particular cause for the attack of the insects ; the nursery ground was new, and no manure was used. In planting Teak in these forests there is a disadvantage as far as the germination of the seeds and the first growth of the saplings are concerned as compared with Nellumbur. At the latter place the seed germinates in a fortnight, and by June the young plant is ready to put out; whereas in Wynaad the seed does not germinate under a month, and the growth is so slow that planting out cannot be commenced before August. Weeding is much heavier owing to the tremendous grass which, if not perpetually kept down, soon smothers the plant. Fresh nurseries have been made for this year's planting.

80. The cost of plantations up to date amounts to Rupees 4,838-9-3, of which 1,366-1-10 was spent during this year.

81. *Contemplated operations.*—8,000 pits are ready, and during the ensuing year 8 or 10 acres will be planted out with teak.

82. *Seegoor.*—There are two Sandal-wood plantations in this range, namely, *the Tallaimallay Sandal-wood plantation* and *the Seegoor Sandal-wood plantation.*

83. *The Tallaimallay Sandal-wood plantation.*—This plantation, situated near the head of the Gazzlehatty ghaut, was commenced in 1863. At first various experiments were tried, such as growing the seed in nurseries and transplanting into bamboo pots, baskets, etc., and eventually into the ground, growing the seed in similar pots, and growing it in the ground where the tree was to stand, etc., etc.; it was eventually found that the most successful plan was to plant the seed in pits where the tree was to stand, water copiously and never transplant. Shade is very necessary to the young plant as can be seen by observing nature, almost all the best grown trees affecting hedge-rows and low copses of jungle. Experiments with different sorts of shade have been made. Cotton was at first tried but was abandoned, because it generally sheds its leaves in the hot weather; the shade now adapted is that of the Chili plant, and these are sown round the seedling Sandal; their leaves always remain green, and the plant does not make too large roots.

84. In Sandal-wood planting a deep rich soil has to be avoided, or the tree will form no heart-wood, though it will grow larger and look finer. Self-sown trees in rich alluvial soil on the banks of rivers are the finest looking trees met with, but are quite deficient in heart-wood, which is the only part valuable. An average soil of a reddish brown colour and not too strong has to be selected. In this plantation there are now 30,000 trees from one to four years old; the largest trees are 12 feet high and 9 inches in girth; it has cost from its commencement Rupees 3,304-8-6, of which sum Rupees 752-15-10 were expended during the official year.

85. *Contemplated operations.*—Ten thousand trees will be put out during the ensuing year.

86. *Seegoor Sandal-wood plantation.*—A small plantation was commenced here in 1863, and 5,000 plants have been put out. The expenditure from the commencement amounts to Rupees 1,459-15-9, of which Rupees 86-13-9 were expended in the last year.

87. *Contemplated operations.*—It is not intended to extend this plantation; the locality is very feverish, and labour very scarce, and spotted deer very troublesome. Water has also been very difficult to procure during the last dry seasons.

88. COLLEGAL.—*Collegal Sandal-wood plantations.*—A Sandal-wood plantation was commenced last year; 12,000 plants have been put out. The expenditure has been up to date Rupees 329-12-11, of which Rupees 74-2-10 comes into the accounts of this year.

89. *Contemplated operations.*—Colonel Morgan proposes planting on a large scale in this range, and has indented for sub-soil ploughs, a cultivator, and other tools. 20,000 plants will be put out during the ensuing year.

90. *South Canara.*—There is one Teak plantation in this district, and a small experimental plantation of Catechu.

91. *Parapa Teak plantation.*—In 1864 a small plantation of Teak was started at Parapa, and 6,000 plants were put out. Parapa is situated near Sooloay in a dense forest-country, where the indigenous Teak has a fine straight growth; the climate and

elevation and rain-fall are about the same as at Nellumbur. In 1865, 11,624 plants were put out, and in 1866, 28,047. In 1867-68 there was no planting, but during last year 24,800 plants were again planted out; this gives a total of 70,471, and the area of the plantation is about 30 acres. The trees put out in 1864-65 are in splendid condition, and are about 20 feet high, with an average girth of 7·92 inches. Amongst those planted in 1866 there have been a great many failures, but the remainder are doing fairly. The average height of those planted out in 1869 is 3 feet.

92. There is also a nursery with about 50,000 seedlings in it, ready for transplanting.

93. A quantity of Blackwood seedlings were also put out in 1864 in a separate plot of ground; a great many of these failed, and, as the others did not grow more than a few inches high in the first three or four years, the experiment was thought a failure, and the plantation was neglected, and fire ran through it one year. The remaining plants, 100 in number, have, however, taken a great start during the last two or three years, and they are now about 15 feet high and 9 inches in girth, and promise well. It is very interesting to know that this valuable tree can be grown successfully; its cultivation has been undertaken during the last three years at Nellumbur, and there the seedlings are still only a few inches high, and great doubts arose as to its success; but it is evidently the habit of the tree to make only root-growth at first, and not to show any upward growth for the first three or four years. The Parapa plantation has cost, from the commencement up to 31st March 1870, Rupees 3,844-0-9, of which Rupees 486-6-2 were expended during the year under review.

94. *Catechu planting.*—At Hospet near the foot of the ghauts, north of Mangalore, a small plantation of three acres was planted with Catechu, and 2,000 plants planted out in May 1869. The growth is slow. 40,000 plants were also planted out in the surrounding Catechu jungles. This plantation, etc., has cost up to 31st March 1870 Rupees 143-9-0.

95. *Contemplated operations.*—Mr. Winter has paid a visit to Nellumbur, and received instructions in teak-planting under Mr. Ferguson. It is proposed this year to plant out 50 acres with Teak, and a small addition will also be made to the Blackwood plantation.

96. *Wynaad.*—There are no plantations in this range, and it is not advisable to commence any at present.

97. NELLUMBUR.—*Conolly Teak plantations.*—It is not necessary in this report to enter into a full account of what has been done in these plantations. Since their commencement in 1844 exhaustive reports have from time to time been published.

98. During the year under review 52 acres have been planted out with 52,000 Teak saplings, and 10 acres with 3,000 Blackwood *(Dalbergia latifolia)*, 3,000 Irul *(Xylia dolabriformis)*, and 1,700 Kurra mardah *(Terminalia tomentosa)*. The young trees look extremely well, and are apparently well established, but as yet we have had but little experience in planting the two latter sorts of trees.

99. The year under review has been exceptionally unfavourable. Jungle fever was unusually severe, floating operations being greatly retarded by it. Planting was carried out at Nellicottah new ground nearer the chain of ghauts, and fever of such a violent type broke out that all operations came several times to a

complete standstill; this accounts for a smaller area having been planted than usual. The timber-market was also in a depressed state, and our sales have been small; hence the deficit against the plantations.

100. The usual operations of weeding, pruning, and thinning, and the preparation of fresh sites for next year's planting have received the attention of the establishment.

101. The unfinished state of the bridges on the high road through Nellumbur is the source of much inconvenience, and causes much delay during the planting season.

102. A considerable portion of the plantations have been demarcated by a Party of the Revenue Survey, and boundary stones erected.

103. *Contemplated operations for* 1870-71.—70 to 80 acres will be planted in 1870-71. Demarcation of plantations and contiguous reserved forests to be completed.

A small nursery and plantation to be commenced for the experimental growth of various sorts of trees, both from foreign countries and those indigenous to the different jungles of the Presidency.

104. SECTION C.—*Reserved forests and contemplated operations therein.*—It is very difficult in the present state of the forests in this Presidency to say what are "*reserved forests;*" it will be necessary, I think, shortly to divide our reserved tracts into two classes, namely:—

1*st.*—Those strictly reserved and in which there are no rights whatever.

2*nd.*—Reserved tracts worked departmentally, but in which certain grazing and other rights have to be allowed.

Before this can be commenced I am now of opinion that a Forest Act will be necessary. We shall also require:—

1*st.*—A separate forest officer for each district.

2*nd.*—The cordial assistance of Collectors of districts and their subordinates.

3*rd.*—Greater power vested in the hands of our officers under proper control of the Collector, whose Assistant, to a certain extent, each forest officer should be. Both these classes of forest should be distinct from the more open forests which will continue to be worked by the license and voucher-system, and as our organization becomes more efficient, it should be our aim and object in each district to add gradually to the area of second-class reserved forests, and detract from the area under the license and voucher-system; or, in other words, to bring under departmental working as much forest as possible. The license and voucher-system is not true conservancy, and though it may, in a financial point of view, be the best system in districts with straggling tracts of forest not traversed by railways, it must eventually be given up in those districts through which the railroad runs, at least as far as the forests within 30 or 40 miles of the line are concerned; the country otherwise will be entirely denuded of wood to swell the forest receipts of a period probably less than a single decade. I speak from an intimate knowledge of the forests of the Presidency from a period prior to railroads, derived from almost incessant travelling in them for the last thirteen years; and in considering this question, it must be borne in mind that railroads are utterly altering the features of the country, and that the time has arrived when Forest Rules

must be strictly acted up to, and rights and privileges clearly defined; or we shall arrive gradually, but not the less certainly, at a period when there will be no forest to conserve, and all rights and privileges will have disappeared. Twelve or fifteen years ago I do not believe that the annual demand for timber (except Teak, Blackwood, and Sandal) in any district exceeded its re-production. Railroads and the consequent enormous demand for fuel, besides timber, and the rapid increase of cultivation, have worked a wonderful change in this respect. The annual demand is now far in excess of re-production, and the evil increases yearly; a crisis can only be avoided by a strict attention to conservancy, a proper reservation of a sufficient area of jungle and forest, supplemented and renewed by planting, and the formation of plantations. The same story has occurred in most countries in Europe, and the remedy is seldom thought of till the last moment. It is the duty of the Conservator to bring this to the notice of Government; but he is powerless to avoid the crisis, when budgets are cut down and increased establishment disallowed.

105. Forest conservancy, as far as India is concerned, commenced in the Madras Presidency, and we had the start of the rest of India. We have, however, been retrograding instead of advancing during the last year or two, and our administration does not contrast favourably at the present date with that of Bengal, Mysore, Burmah, etc. The reason is, that we have not the support of the Board of Revenue or of Collectors of districts. Our rules have always to give way to any supposed rights of the ryots, and become more lax in their observance every year; and year by year the authority of our officers becomes less and less, whereas in Bengal, Mysore, etc., it is quite the reverse.

106. The following may be looked upon as the reserved forests at the present time:—

KURNOOL.—A certain tract of the Nullaymallays.

ANAMALLAYS.—The Government forest (proper) and the leased forests on the Anamallay Hills.

BOLUMPUTTY RANGE.—The Sholaykurray forests above ghaut. The escheated Chenat Nair forest.

MUDUMALLAY.—The leased Teak forests and a portion of the Wynaad forest worked in connection with it.

SOUTH CANARA.—The Sooleay Teak forests. The ghaut forests.

WYNAAD.—The Government Teak belt.

NELLUMBUR.—The leased forests.

107. KURNOOL RESERVED FORESTS.—This year all that portion of the Nullaymallays, situated between the Nundycanama and the Yellagode ghauts, has been formed into a reserve. It is a compact block of about twenty miles long by ten broad, and may be roughly estimated to contain about 200 square-miles, the base of the hills is about 800 feet above the sea and the highest point 3,300 feet.

108. *Description of reserve.*—The outer slopes of the hills yield little but stunted and inferior trees, and it is only on the plateaus and in the higher valleys that first-class trees are met with. In these latter localities Maddie (*Terminalia tomentosa*), the reserved timber most in use in this district, attains its largest size, and Yeggi (*Pterocarpus marsupium*) and Jitegee (*Dalbergia latifolia*) generally small. Chiriman (*Anogeissus latifolius*) and other valuable timbers are abundant. Teak is generally of poor growth and very scarce, having been largely felled even as

saplings before the days of conservancy; but fine trees are occasionally seen. In a walk of a mile through the better portions of this reserve, two or three Teak trees may be counted, ten to twelve first-class Maddie (*i.e.*, over six feet in girth), and about fifty trees of other valuable sorts of timber.

109. Only one-eighth of the reserve can be looked upon as really good forest; this is an area of 25 square-miles or 16,000 acres. In this we may reckon one first-class Maddie (yielding 40 cubic feet) to every 10 acres, which equals 64,000 cubic feet; of second-class Maddie (4 to 6 feet in girth), we may calculate one to every acre; these may be said to average 12 cubic feet each, which gives a total of 192,000 cubic feet. Small trees are numerous, and may be calculated at ten per acre; so that carefully worked, this forest should yield a good supply annually without being worked beyond re-production.

110. *Average annual yield.*—200 trees of Maddie = 8,000 cubic feet, can be felled annually from this forest without fear of exceeding the re-production; this will probably be as much as there is a market for at present in addition to what is felled by license and voucher from other parts of these hills. With careful conservancy the amount may be increased in future years as the demand also increases.

111. I have treated this subject only as concerns the yield of Maddie timber, as this is the principal timber and the one most in use in the district. The yield of other timbers, except Teak and Jitegee (Blackwood), which, as a rule, are neither of them of good growth, may be said to be considerably in excess of all present demands; the annual yield cannot be less than 50,000 to 60,000 cubic feet. No timber has been felled from the reserve during the year, as there was already a good supply in depôt, and proper arrangements for systematic felling had not been discussed or arranged, nor had the surveys or calculations for the annual yield been carried out until nearly the close of the year.

112. *Contemplated operations on felling for* 1870-71.—It is proposed to fell 8,000 cubic feet of Maddie and 20,000 cubic feet of other timbers for our depôt. Careful conservancy, such as the cutting of creepers and clearings of saplings, will be carefully carried out.

113. *Reserve considered as regards requirements in future years.*—The Nallay-mallays undoubtedly possess the finest forests to be found on the eastern side of our Presidency, and they contain an area of not less than 2,500 square-miles. There is a very considerable district-demand for wood, but no railway, however, comes near them at present; so that for the present I consider the area formed this year into a reserve, sufficient. There are no grazing rights in this reserved portion, and I think we shall be able to make it a very strict reserve. The rest of the hills can, for the present, be worked by voucher and license, but before long it may be advisable to bring portions, or even all of them, under the second-class reserved forest; but this would necessitate a much larger establishment, and financially speaking, would be a loss; I cannot therefore recommend it just at present. The belt of forests along the foot of the hills supply agricultural wants, but great care must be taken that this is not allowed to disappear before cultivation. Not one acre of it should be given up without the knowledge of Government and without a report from the Conservancy Department, and if this is acted up to, the future welfare of this district is insured.

114. ANAMALLAYS.—The reserved forests in this district consist of *the Government Teak forests proper* and *the leased Teak forest.*

115. Both these are situated above ghaut at an elevation of 2,000 to 2,500 feet; the area of the former is about 8¼ square-miles, and the latter about 25 square-miles. They both contain a large quantity of valuable Teak and Blackwood, the finest and largest in India, and probably in the world, and an enormous amount of all the more valuable jungle-timbers. They adjoin forests belonging to the Cochin Government, and a tract belonging to the Colungode Nambiddy.

116. The Teak and Blackwood have been worked much beyond the annual re-production, and the jungle-timbers have hardly been touched. This, it may be said, has been unavoidable: the demands of the Bombay Dockyard and the Madras and Bombay Gun Carriage for Teak and Blackwood have been enormous, and always beyond what we could fell and get out during the season; and there being no district-demand, jungle-timber is unsaleable at rates which would enable us to remove it from the mountains. Our plan has been to fell as many full grown trees as we possibly could work up during the season, wherever we could find them, giving consideration only to the fact of leaving a certain number of large trees to any given area to supply seed for re-production. The working season is only from June till November, or the six monsoon months, when the forest is overgrown with a dense undergrowth and grass of 10 feet high; and when it swarms with wild beasts and elephants, and all the work above ghaut, as far as felling and removal of timber to the roads, has to be done during this period. For the other six months in the year the forest is very deadly, and sleeping in it is certain to be followed by jungle fever. When I worked this forest I have on several occasions had tigers spring up close to me, or suddenly cross my path when I least expected it, and the axemen have often refused to go to their work on account of wild elephants, and would not attempt to proceed to it, till I accompanied them to drive away the elephants; and the jungle is so thick that they have often to cut their way to a tree they wish to examine previous to its being marked for felling. It may be asked, can a forest like this be worked like a forest in Europe, with due consideration as to its annual yield, etc., and can estimates, with any pretence to correctness, be made of the number of trees, etc.? I am afraid not; if it was all equal and of the same character, a rough estimate might be taken by surveys of small areas; but in every direction one meets steep ravines, large tracts are only bamboo or reed, and the Teak is most unequal in its distribution, perhaps 30 or 40 first-class trees may be seen on an acre (particularly in some of the rising knolls), or again several acres may be searched without a single tree beyond a sapling being seen. When, however, it is understood that up to the present date we have scarcely ever felled any but full grown trees or trees past their prime, (12 feet in girth being amongst the smallest felled, and the largest ones running up to as far as 22 feet,) it cannot be said that the forest has been worked on very wrong principles. The very large trees are now becoming scarce, but the forests abound with Teak of sizes from small saplings up to 10 or 12 feet in girth. It is not proposed to fell any trees of a less girth than 10 feet.

117. These forests, which are about the finest in India, should be formed into a strict reserve, and conservancy, such as the cutting of creepers and clearing of

saplings, should receive systematic attention; this will be difficult unless more power is vested in the Deputy-Conservator in charge, and unless the system of the collection of hill-produce is re-modelled. As far as timbers or grazings are concerned there are no rights, but as the hill-tribes are employed by the Chetties from the plains in collecting the hill-produce, the latter are continually coming up to the forests to exchange rice for hill-produce, etc., and they are the cause of the fires which sweep through these forests every year; unless we can put a stop to these fires, any expenditure in conservancy may be so much money thrown away. It is not much good clearing and pruning a lot of young saplings, if they are to be burnt up or scorched and injured in the next annual fire. I have no wish to see the Kaders deprived of the hill-produce, or to see any tax put on it; but I should like to see them collecting for the department and under our control. I do not think that there would be any difficulty in the way, if the question was taken up by, and received the support of, the Collector. A similar plan is pursued in forests under the Travancore and Cochin Governments, and the hill-men are certainly better off than their brethren in our forests, who are, as a rule, quite under the thumb of unscrupulous Chetties. If any forest in the Presidency should become a strict reserve, it is the Anamallay Teak forest.

118. The Deputy-Conservator's report shows all operations, etc., for the year in these forests. Felling, which has been stopped since 1865, was again renewed. Rosewood and Teak were both felled, but not as much as could have been wished, considering the enormous demands from Bombay; but the Deputy-Conservator seems to have had much greater difficulty in procuring axemen or keeping them in the forest than has been previously experienced. The value of the stock of timber in hand still stands at a high figure, namely, Rupees 1,16,133. This is, however, probably greatly in excess of the sum that will be realized, as former estimates were made at a ridiculously high figure; at any rate, the whole of it and very much more has already been indented for by the Bombay Government.

119. *Contemplated operations.*—To fell about 20,000 cubic feet of Teak and Blackwood to meet the requirements of the Bombay Government, and to cart out as far as possible all the timber at present in depôts above ghaut.

120. *Bolumputty range.—The Sholaykurray forest* and *the Chenat Nair forest* in this range may both be considered *reserved.*

121. *The Sholaykurray forest*—Contains an area of about 4 square-miles, 2½ of which is situated above ghauts. It is situated in the Coimbatore district, but on the borders of Malabar, and is well within the influence of the south west monsoon, so that the growth of timber is rapid and good. It contains much Teak and Blackwood, but was worked recklessly before being handed over to the department, and consequently requires rest for some years, and very careful working. It was worked to a limited extent during the past year, but the chief operations were the trimming up of fallen timber. Captain Gosling's report gives a detail of all operations. It may become a first-class reserved forest.

122. *The Chenat Nair forest*—Is an escheated tract, containing about 14 or 15 square-miles, about one-fourth only of which is down in the plains. It is situated in Malabar close to Palghaut. It contains much valuable Rosewood and some Teak, etc., but having been almost worked out as far as ripe trees of these two reserved

kinds are concerned, it requires rest for some years, and has not been worked at all during the past year. There is much valuable jungle-timber, and its proximity to the Railway makes this forest one of great value; it will be able to supply a large amount of railway fuel.

123. *Contemplated operations.*—A small amount of Teak and Blackwood will be felled departmentally in the *Sholaykurray forest*, and jungle-wood as indented for in both the *Sholaykurray* and *Chenat Nair*.

124. MUDUMALLAY.—*The Mudumallay Teak forests*—Near the foot of the Neilgherries, contain an area of about 300 square-miles, and consist of two blocks, namely, 200 square-miles of forest leased from the Rajah of Nellumbur, and 100 square-miles of Government forest, a continuous block.

125. These forests contain much valuable Teak, and supply the whole demand of the Neilgherries, also much superior jungle-wood and Blackwood, for which, however, there is at present little or no demand. The average annual yield in Teak over fourteen years has been 30,000 cubic feet; but as the forests now require some rest, it is not proposed to fell more than 10,000 cubic feet for some years. Colonel Morgan gives all operations in detail in his report. This tract is a first-class reserved forest.

126. *Contemplated operations.*—To cart some 30,000 cubic feet of Teak from the depôts in the interior of the forests to Mudumallay and Musangoody; to cart 20,000 cubic feet of Teak from Mudumallay, etc., to Ootacamund; to extend the feeders of the main line of road in the forests.

127. SOUTH CANARA.—This district is very rich in forest, and has an annual re-production very far in excess of any present demand, or any demand that may be likely to spring up for many years, unless a railroad comes through the district. With careful conservation these forests will be a mine of wealth to Government in future years. Nearly the whole of the plains is studded over with valuable tracts of forests, which may be all considered as tracts under license and voucher; but the *Sooleay Teak forests* and all *the ghaut-forests* along the whole chain from Coorg and Malabar to the south up to the confines of North Canara may be considered as reserved forests, but will eventually have to be divided into first and second class.

128. *The Sooleay Teak forests.*—This is a fine tract of several square-miles of indigenous Teak of good growth, but still young. It is situated between Sooleay and Parapa, and has received much attention as far as conservancy is concerned, for the last ten years, or even since our department commenced operations in the district. Several lacs of Teak trees have annually been pruned, and the growth of saplings fostered and the improvement of the forest is very marked and satisfactory, and all the trees have a fine straight growth, and a good many are 50 to 60 feet high and 4 to 5 feet in circumference. Blackwood of fine growth is also found in this tract, and much valuable jungle-timber.

129. *The Ghaut-forests.*—Commencing at the south there may be briefly enumerated as follows:—

The Malut forests, containing much young Teak, but ripe trees scarce, owing to extensive and reckless felling in former years. Blackwood of large size, but difficult to get out in the present state of the rivers and roads. Jungle-timbers of the superior sorts abundant.

The Sampajee forest, containing much valuable young Teak, from which great profit may be expected in future years; ripe trees very scarce owing to the reckless felling of the Mangalore timber merchants in former years. Blackwood and Kiral boghi *(Hopea parviflora)* plentiful; all sorts of the better jungle-timbers abundant.

The Kuddamkal forests, containing valuable Angelli *(Artocarpus hirsutus)* and jungle-timbers.

The Soobramony forests, containing first class Blackwood. Poon and Angelli and jungle-timbers much worked by the Mangalore merchants in former years, but only about the base of the ghauts water-carriage to Mangalore.

The Sirady forests, containing Poon and Angelli and vast quantity of fine jungle-timbers.

The Charmandy forests, containing Angelli, Marwa, Inga Xylocarpa, Kiral boghi and Banapu (*Terminalia*) and other jungle-timbers; these forests have hardly been touched by the axe, as they are more distant than the others.

The Andar forests, containing very fine Poon, Angelli, and jungle-timbers. Carriage to the coast very difficult—no roads or rivers.

The Tingler Mukee forests, a very extensive tract containing much Poon, Blackwood, Angelli, Naga (Iron wood), and many jungle-timbers, could probably yield 20,000 cubic feet annually (if there was a demand) without being over-worked.

The Judcul forests, containing a large supply of young Poon, and a few ripe trees and abundance of good jungle-wood.

130. Very little timber has been felled during the year, as there was a good supply in depôt, and the demand at present is small. Mr. Winter's report gives a detailed account of operations.

131. *Contemplated operations.*—In the Oopinangadi talook to fell departmentally 1,000 candies of reserved timber and 500 candies of jungle-timber, and to make a number of boats, for which there is a large demand.

132. In the Cassergode and Condapore talooks no departmental felling is necessary, but a large amount of timber at present in the depôts and forests will be brought down to the coast depôts.

133. *Wynaad.*—The Teak belt from Mudumallay to the Coorg frontier may be all looked upon as a first-class reserved forest; it is about thirty miles long and six in breadth, and after deducting the private forests belonging to the Pulpilly Temple and the Padree tract, may be said to contain about 150 square-miles; its elevation ranges from 2,000 to 2,300 feet. Next to the Anamallays it is the best Teak forest in the Presidency, and is a very wild tract, overrun with elephants in some parts, and very feverish for about four months in the year. Besides Teak it contains much Blackwood, Hone *(Pterocarpus marsupium)*, Matti *(Terminalia)*, Ven Teak *(Lagerstræmia)*, and many other valuable timbers. The Teak in some portions has been worked to a small extent for the Mysore market, but hardly any of the other timbers have been touched, as there is no market for them at present. The whole tract has been demarcated as a first-class reserved forest, and boundary stones erected, and there are no rights beyond those of the hill-men who collect jungle-produce. By the late orders* of the Board our department is not allowed to interfere in any way with the collection of this hill-produce, and, as far as I

* *Vide* Proceedings of the Board of Revenue, No. 1,989, dated 25th March, and No. 2,103, dated 6th April 1870.

understand these orders, the Mysore ryots or any one may enter this tract to collect anything that may come under the denomination of hill-produce. Mr. Cherry calculates that there are less than 150 able-bodied men amongst the Kurambers (the hill-tribe of this district) in the whole tract of 150 square-miles; so it is not possible that these men can collect nearly all the hill-produce; and I consider it very important that the collection should be under the Forest Department, and would refer to my remarks on the same subject under the head of reserved forests on the Anamallays (*vide* paragraph 117). It is an anomaly to call these forests reserved, if any one can enter them to collect what they may call hill-produce without any supervision or control.

134. Felling, carting, and floating operations were carried on in this range by Mr. Cherry, under the control of Colonel Morgan, and his report particularizes all operations.

135. *Contemplated operations.*—To fell in the Coorchat and Chedalet forests, and cart into the Goondry depôt 20,000 cubic feet of Teak and 1,000 cubic feet of Blackwood, and to float to Hirnandy all timber now in the forest depôts; to open out some new forest-roads, and repair existing ones.

136. NELLUMBUR.—In and around the Conolly Teak plantations there are several tracts of leased forest which are considered *reserve*, and which yield Teak and other valuable timbers; the area of the whole leased tracts is $48\frac{5}{8}$ square-miles, but this includes the portions planted. The natural forest has been over-worked in former years by timber merchants under the Rajah, and requires rest. Some portions can at present yield annually a small amount of ripe timber.

137. By the above remarks upon reserved forests it will be seen that there are at present no tracts that we can properly call reserved in any of the following districts:—Gumsoor, Cuddapah, North Arcot, Salem, South Arcot, Madura, Tinnevelly, Sigur, Collegal, and Bhowani. Second-class reserved forests should at least be formed in most of these ranges; it is receiving our attention, and a commencement has already been made in Salem, Madura, and Tinnevelly, where the question is one of immediate importance. With our present small establishments (*i.e.*, two districts doubled up under one officer), and the existing state of forest law, the question is one of great difficulty, and can scarcely be carried out effectually without the cordial assistance of Collectors and the Revenue authorities generally.

138. SECTION D.—*Forests under the license and voucher-system.*

139. *Gumsoor and Surada.*—These forests, situated near Russelcondah, are worked almost entirely under the license and voucher-system; but some tracts are reserved for the supply of timber to the Department Public Works and Government Departments. They comprise very fine tracts of Sâl (*Shorea robusta*), Soln or Red Cedar (*Soymida*), and many other valuable timbers, and contain an area of about 600 square-miles; they have never been worked nearly up to their annual re-production. There is no export market, and the department has not been able to make one, beyond supplying a certain amount of Sâl to Government Departments in the adjoining districts. The present importance, therefore, of these forests is not great, but the district-demand, etc., gives a revenue that more than covers the cost of conservancy and establishment. Overseer MacCally is very attentive, and is

constantly travelling over his range, checks clandestine felling, and attends to conservancy. Extended operations are not at present called for. The report of the Overseer, published as an Appendix, gives in detail all operations.

140. CUDDAPAH.—All the forests of this district are under the license and voucher-system; they comprise all the forests on the hills and plains on both sides of the North-West Line of Railway between Tripatty and Cuddapah, and may be estimated at about 250 square-miles. The mountainous portions have been but little worked, and are in many parts not easily accessible at present; but almost all the tracts of lowland forest have been indented on too far beyond re-production, and tracts are disappearing before cultivation. Reserves and plantations have been formed, as explained under these heads in this report,* but not to the extent that will be necessary, and the question must receive earnest attention. These forests, which yielded Government no revenue whatever prior to 1862, have been worked very successfully of late by Mr. Yarde, who is a most careful and pains-taking officer, and a really good planter. The revenue for the current year has risen to the large figure of Rupees 80,287-15-7, of this Rupees 32,613-7-10 have been realized from locomotive fuel, and Rupees 26,058-13-6 by the departmental working of only the stumps and roots of the Red Sanders *(Pterocarpus santalinus)*, which fetches a large price as a dye-wood, and is exported from Madras. The great demand for fuel for the locomotives has considerably enhanced its value, and every holder of any small tract of land will endeavour to make money by the sale of wood; and without the utmost vigilance from our department, clandestine felling will be likely to increase, and we can hardly hope to keep it under without the assistance of the Revenue authorities. We know by experience that if a Native owns 50 acres of jungle, he can throw into the market not less than the yield of several hundred acres. His wood-cutters fell in all the neighbouring Government jungles, and, unless we catch them in the act of felling, we can do nothing, and even then we can seldom get them punished, and the landholder always screens himself by saying that he has only granted passes to fell in his own land. It is most important that Government should endeavour to buy up all private tracts of jungle in this and other districts near the line of railway; it would make conservancy far easier and much more satisfactory.

Vide paragraph 104.

141. Some years ago Mr. Yarde was placed in charge of the Cuddapah and North Arcot ranges combined. The work was then comparatively light. We had no reserves or plantations and no depôts, and the working was entirely under the license and voucher-system. The work has enormously increased during the last two years. Numerous plantations and reserves have been commenced in both ranges, besides a large plantation at Ghooty in the Bellary range, and more are about to be added; and the departmental working of Red Sanders roots and stumps has been undertaken, and we are about to take over the working up of the beams and posts of this valuable tree. One man cannot now possibly look after the working of the two ranges, and the Conservator some time ago applied for a separate Assistant Conservator for the North Arcot Range; no orders have been passed on this point, pending the question of the re-organization of the department, and in the meantime the conservancy of these ranges is suffering. The question is one of the greatest importance.

142. A map, on a large scale, has been commenced, showing all the forests, reserves, and plantations, within a certain distance of the line of railway, and all tracts that are available for reserves or plantations and all private forests; this has been delayed by the pressure of more important routine work.

143. *Contemplated operations.*—This district will remain chiefly under the license and voucher-system, and as there is a supply of timber in depôts and not much demand from them, little or no timber will be felled during the year by the department. It is proposed, however, to undertake the felling departmentally of all the Red Sanders posts and beams which will, it is expected, be very profitable.

144. *Kurnool.*—With the exception of the newly reserved tract on the Nallay-mullays, the whole of this range and the forests about the foot are worked on the voucher and license-system; it comprises an area of upwards of 1,000 square-miles, but very much of it is very inferior. Though the line of railway does not run very near this range of hills, the importance of these forests is annually increasing, and the demand for timber steadily rises. In addition to the very large district-demand this year, the Irrigation Company, the Telegraph Department, and the Railway Works in the Bellary District have indented largely on these forests. 17,546 bandy-loads of timber have been taken out during the year, which represents 3,50,920 cubic feet; this amount is exclusive of timber taken out free of seignorage by the ryots, which amounts to 11,340 cubic feet of timber and 2,165½ tons of firewood. Mr. Sheffield has worked this range with great care during the year, and he is constantly travelling over his range.

145. *Ryots' rights not properly defined.*—The forest officer of this district having learnt that the ryots brought more firewood out of these forests than they could possibly require for their own use, and that they sold it to people not entitled to free wood, he proposed a plan of regulating the number of bandy-loads to be allowed to each ryot according to the extent of his land. This suggestion received the approval of the Collector, and the Board were addressed on the subject; they however* disapproved of the plan, and ordered that for one year firewood should be given free *without any restriction as to quantity.* In the face of orders like this, real conservancy may be said to be next to impossible, and ill-defined privileges of this nature being granted at a time when a proper restriction on all rights is becoming absolutely imperative, must act injuriously. Luckily the railway does not come very near the forests in question, but very much injury might still be the result, and, if concessions of this nature are made in Kurnool, the ryots in Salem, Cuddapah, etc., may claim the same.

* *Vide* Proceedings of Board of Revenue, No 957, of 13th February 1869, and G O, No 2,998, of 20th November 1869

146. *Contemplated operations.*—The forests of this district at present are not over-worked, and special arrangements or planting to any extent is uncalled for; the demand is less than one cubic foot per acre per annum. Some portions of the forest are, of course, difficult of access, and have not as yet been touched; but, if necessary, they could be made accessible by the formation of cheap roads. Our department regulates the felling, and when certain tracts require rest they are closed.

147. *North Arcot.*—All the forests of this district remain under the license and voucher-system. I regret to say that conservancy arrangements are far from

satisfactory, owing to large tracts contiguous to our forests still remaining under the Revenue authorities. Whilst this is the case, clandestine felling is comparatively easy, or it requires most excessive care and watching both on the side of our department and that of the Revenue authorities to check it; and we have already seen that these practices are winked at, if not participated in, by the Native Revenue officials, and it will be very difficult for the department to regulate the supply of railway fuel, or calculate the annual yield, to both of which subjects our officers are now giving great attention. Both the Board and Government were of opinion that all the forests should be placed under the Special Department, but the question has, however, been allowed to lie over, pending the re-organization of the department and the settlement of the point as to how far all the forests are to be placed under the Collectors of districts.

148. There are about 100 square-miles of forests under the license and voucher-system. All the tracts near the railway have been much over-worked of late years, and great care must be taken both by our department and the Revenue authorities that no more tracts of woodland are alienated from Government control. Plantations have been commenced, but these must be largely extended, and reserves must be formed and tracts re-planted as felling goes on.

149. *Contemplated operations.*—As I have already explained in paragraph 141, I have recommended that a separate Assistant should be appointed to the charge of this range, as it cannot be now worked efficiently by the officer in charge of the Cuddapah range; the renewal of tracts already felled, or partially felled, and the formation of reserves, etc., requires much attention, but operations must depend upon the amount of supervision available.

150. *Non-taxation of head-loads of firewood.*—The seignorage on firewood in this district has hitherto been only on the bandy-loads; head-loads having been free even when cut for sale, which is not the case in other districts. Now that the Railway has greatly enhanced the value of this article, and it has been found necessary to increase the seignorage; this rule is acting most injuriously, almost, I may say, to the total loss of all revenue on this important item. The Collector has been referenced on the subject prior to its being laid before Government, but he is opposed to any alteration. There can, however, be no doubt that a proportionate seignorage must be placed on the head-load, and the question is about to be laid before Government.

151. *Salem.*—All the forests of this district may be said to be still under the voucher and license-system. Portions of the Denkinacottah and Tripatore forests are worked to a certain extent departmentally, but they are also open at present to voucher and license-felling. Most of the accessible portions near the line of railway have been very much over-worked, particularly for railway fuel; but even near the line the timber on the slopes and ravines of the mountains and on their plateaus has scarcely been touched; but this is in most cases on account of the expense that would attend bringing this timber to the market. Very large fuel reserves have been demarcated and enclosed, as has been explained under the head "reserves," but much is still required in this direction, and extended plantations are necessary; but the most important operations in this range will always be the re-planting of tracts by the department as they are deforested for locomotive fuel.

Conservancy has suffered from constant change in superintendence. Lieutenant Walker, who had done so very much towards bringing this range into good working order, had to take up the Madura and Tinnevelly ranges early in the year, and Mr. Cadell then assumed charge of Salem and South Arcot, but his health prevented his travelling over his range as much as was necessary; he was compelled to take sick leave to England in January, and since then Mr. Knox, an Assistant to the Collector, has been in charge; but he has suffered much from fever, and has been prevented from travelling over his range. The great increase of work, chiefly in connection with the railway fuel supply, reserves, plantations, etc., has made it simply impossible that the officer in charge of this range can also work South Arcot, and an application has been made to Government for an Assistant for that range; this is in consideration in connection with the proposed re-organization of the department, but in the meantime the conservancy of this range and South Arcot has been suffering, and until the Salem officer can devote all his attention to this very large and important range, operations must be retarded.

152. The most important work just at present is the formation of a Forest Chart on a large scale, showing all forests, reserves, plantations, sites for reserves, sites for plantations, and private forests, and the area of each within a certain distance of the line of railway; and until this is completed we are not in a position to calculate the yield of locomotive fuel with respect to future requirements, or to regulate the annual supply with reference to re-production. Mr. Cadell commenced this Chart, and the Collector sent one of his Assistants into the field with him; but the pressure of the routine work of the two ranges and subsequently ill-health greatly delayed its progress, and Mr. Knox has not been able to take it up. A Chart of this nature could not be satisfactorily drawn up without the cordial assistance of the Revenue authorities. Mr. Cadell reported that every obstacle was thrown in his way of obtaining possession of any particular sites that he thought desirable for reserves or plantations; every thing had to give way to any objections of the ryots. It is simply impossible that the conservancy of a range like this, with a railway through its centre, can be established on a firm footing, if the ryots' rights are to be the same as they were before the era of railways; they must in some cases be curtailed, or at any rate clearly defined and properly restricted, or, in a very few years, they will find that they only exist in name. The Denkinacottah forests of this district are very fine, and in some parts are as yet quite untouched, and they possess a very large amount of timber. At present, however, they are inaccessible, and cannot be worked to any advantage until communications are opened out.

153. *Sandalwood operations.*—The Sandalwood was entirely worked by the department, and 8,420 cubic feet of timber were felled departmentally.

154. *Contemplated operations.*—The extension of the present plantations at Mallapooram and the supplementing of the reserves by planting out from the nurseries; the departmental working of the Sandalwood and of other timbers to a limited extent for our depôts; the regulating of the license and voucher-felling and inspection of these tracts and the Railway Forest Chart already mentioned, will occupy the establishment for the ensuing year. The further extension of reserves

and plantations, which is much needed, must depend on the amount of superintendence available and upon funds at our disposal.

155. *South Arcot.*—The forests of this district are almost entirely under the license and voucher-system, but a portion of the Trinomallay talook is worked by the department, and 2,243 cubic feet of timber were felled departmentally. From causes explained elsewhere the Salem forest officer has not been able to give sufficient supervision to this range during the year, and it is now very necessary that a separate Assistant should be appointed to this charge. Seven fuel tracts in the Ginjee talook, containing an area of 115,000 acres, have been reserved and roughly demarcated at a cost of Rupees 184-6-0; this is a move in the right direction, but if the railway enters this district, extended operations of this nature will be necessary besides plantations.

156. *Contemplated operations.*—These must depend in a measure upon the appointment of an Assistant for this range. Plantations will be commenced if possible.

157. *Madura.*—All the forests of this range have more or less been under the license and voucher-system during the last year, though the departmental working has been carried on in the Cumbum forests. Extended departmental working is being introduced; zemindary tracts of forest are being brought under the department; and the railway being about to enter the district, large reserves must be formed supplemented by planting; all this will create so much more work that the officer of this range cannot attempt to work Tinnevelly also, and must be relieved from that charge. Lieutenant Walker's report gives in detail the operations in this range.

158. *Contemplated operations.*—The closing of the voucher and license-system partly, if not altogether, in the Cumbum, Periakolum, and Pulney talooks, and the working departmentally of these forests and the formation of depôts; the assuming charge of the forests of the Ayagoody Zemindary and the Rettiembody Mootah on behalf of the Zemindar; and the preparation of Forest Charts will, in addition to the proposed operations under the head of plantations and reserves, occupy the establishment during the coming year; but the extent to which these can be carried out must depend upon the sanction for increased superintendence, a slight increase in the subordinate establishment, and on funds available.

159. *Tinnevelly.*—These forests have all remained under the license and voucher-system during the year. Certain tracts of the ghaut-forests have been selected, and boundaries defined; but they have not as yet been even roughly demarcated. The ghaut-forests are very fine, and, as a rule, almost untouched by the axe, except at the outskirts and in the most accessible portions. Previous to demarcation and the regular formation of reserved tracts, the settlement of the boundary question between Tinnevelly and Travancore and between the Government forests and those of Zemindars is very important; the former has been in dispute for years, but now that a railroad is entering this district, the question becomes one of vital importance, and a commission should be appointed to settle the question. Proposals on the subject are before Government. Plantations will be necessary in the plains, now that the railway is to come into this district. The ghaut-forests are very rich, and with fair treatment, I believe, may be said to be

quite inexhaustible; and they have not been devastated by kumri or hill-cultivation to the frightful extent that they have on the Travancore side. Lieutenant Walker estimates that in future years they might yield a revenue of 1,00,000 Rupees, and I do not think this will turn out to be an over-estimate. The Deputy-Conservator's report on this range gives a detail of operations. Increased supervision is very necessary, and an Assistant must be nominated, who might at least at first be under the Deputy-Conservator of Madura. Proposals on this subject are before Government.

160. *Contemplated operations.*—The demarcation of reserved tracts as distinct from those worked by license and voucher will receive attention during the ensuing year and the formation of plantations and the settlement of boundary disputes; but the extent to which these can be carried out will depend upon an increase in supervision. The Board of Revenue have sanctioned our taking over charge, from the 1st of July next, of the valuable and extensive forests belonging to the Singamputty Zemindary, situated to the south of Papanassum. They at present belong to a minor, and will be conserved and worked by us on account of the Court of Wards.

161. *Anamallay and Bolumputty.*—The lowland forests in the Polachy and Oodamallaycottah talooks about the base of the Anamallays and the forests of Bolumputty are under the license and voucher-system, and have been worked during the year by Captain Gosling, whose report gives a full detail of operations.

162. *Seegur, Suttiamungalum, Bhowani, and Collegal.*—These forests are all under the license and voucher-system, and have been worked by Colonel Morgan during the year, whose report gives a detail of operations. They all contain a large supply of valuable timber, but cannot be worked up to the extent of their annual re-production, as from the want of roads timber cannot at present be brought to a market and the district-demand is limited. Improved communications will annually, however, increase the value of these tracts. The Sandalwood tracts in these ranges have been worked departmentally.

163. In Seegur the area of Teak forest may be estimated at 40 square-miles, but this also contains many other trees and bamboos, etc. The Sandalwood tract comprises about 50 square-miles. In Suttiamungalum there are 50 square-miles of forests which chiefly yield Blackwood *(Dalbergia latifolia)*, Venga *(Pterocarpus marsupium)*, and Acha *(Hardwickia binata)*, and the Sandalwood area is about 100 square-miles. In Collegal the Sandalwood area is about 100 square-miles, and the area under forest 300 square-miles; the latter is chiefly the slopes and higher ranges of the Balarangams. In Bhowani there are 300 square-miles of forest containing Acha, Venga, and other timbers, and 100 square-miles of Sandalwood tracts.

164. *Contemplated operations.*—In Collegal to fell and prepare 4,000 Maunds of Sandalwood; in Suttiamungalum to fell and prepare 3,000 Maunds of Sandalwood and to fell 5,000 cubic feet of Acha (*Hardwickia*) for the railway at Mattapolliam; in Bhowani to fell and prepare 3,000 Maunds of Sandalwood.

165. South Canara.—All the tracts of forests in the plains of this district, except the Sooleay Teak forests, are under the license and voucher-system. They have been worked by Mr. Winter, who entered the department and took charge of this range in May last.

166. *Contemplated operations.*—The Puiswunni, a fine river which rises in Coorg, and runs through the Sampojee and Sooleay forests, and empties itself into the sea at Cassergode, south of Mangalore, is used for floating, but great difficulties and delays occur at several places where the rocks form regular barriers across the river at all seasons except the highest floods, when the floaters will not undertake operations. Mr. Winter has promised to undertake blasting operations at several of these places, and, if successfully carried out, it will be of the greatest benefit to the department. Rupees 1,000 will be spent on these operations.

167. SECTION E.—*Yield of the forests for the year and expenditure on felling and carrying timber to depôts.*

168. GUMSUR AND SURADA.—*Departmental felling.*—Timber, 521 bandy-loads = 10,410 cubic feet, felled and brought to depôt at a cost of Rupees 1,491-12-5.

License and Voucher-felling.—Timber, 4,162¾ bandy-loads = 83,255 cubic feet; firewood, 875 bandy-loads = 390 tons.

169. CUDDAPAH.—*Departmental felling.*—11,61,799 lbs. Red Sanders felled and brought into depôt by departmental agency at a cost of Rupees 2,609-8-8, or Rupees 3-10-0 per 1,600 lbs. Engine firewood, 22,318 tons.

License and Voucher-felling.—Reserved timbers, 2,640 bandy-loads, and unreserved timbers, 4,183 bandy-loads 1,36,460 cubic feet; firewood, 3,671 tons; bamboos, 1,017 bandy-loads; and charcoal, 75 tons.

Free felling.—Agricultural timber, etc., 24,000 cubic feet, and bamboos 332 bandy loads. No accounts have been kept for firewood removed upon free passes.

170. KURNOOL.—*Departmental felling.*—The only departmental felling has been 1,588 telegraph poles, brought into depôt at a cost of Rupees 2,372-8-0.

License and Voucher-felling.—Building timber, 17,546 bandy-loads = 3,50,920 cubic feet; firewood, 2,376 bandy-loads = 1,060 tons, and 1,044 head-loads = 23 tons, total 1,083 tons; bamboos, 6,276 bandy-loads, and 5,132 bullock-loads; and charcoal, 14,038 cawrie-loads.

Free felling.—Agricultural timber, etc., 567 bandy-loads = 11,340 cubic feet; firewood, 4,851 bandy-loads = 2,165½ tons; and bamboos, 379 bandy-loads.

171. NORTH ARCOT.—*Departmental felling.*—Engine firewood, 587 tons.

License and Voucher-felling.—Reserved timber, 504 bandy-loads, and unreserved timber, 1,080$_{7_8}$ bandy-loads = 31,688¾ cubic feet; firewood, 1,529 tons; bamboos, 6,392½ bandy-loads; and charcoal, 562 tons.

Free felling.—Agricultural timber, etc., 3,080 cubic feet, and bamboos 154 bandy loads. No accounts have been kept for firewood removed upon free passes.

172. SALEM.—*Departmental felling.*—Building timber, 1st, 2nd, and 3rd class, felled and brought to depôt, cubic feet 8,420, at a cost of Rupees 3,724-14-11; 95,310 bamboos at a cost of Rupees 1,270-13-6; Sandalwood felled and brought to depôt, 1,204 Maunds and 12½ lbs. at a cost of Rupees 651-11-2; Engine firewood, 7,836¼ tons.

License and Voucher-felling.—Building timber, 712 bandy-loads = 14,240 cubic feet, and 4,647 head-loads = 4,647 cubic feet; firewood, 12,868 bandy-loads = 5,700 tons; bamboos, 5,117 bandy-loads, and 64,846 head-loads; charcoal, 3,309 bandy-loads, and 7,221 head-loads.

On free-passes.—118 bandy-loads of building timber = 2,360 cubic feet, and 42,636 head-loads of timber = 42,636 cubic feet. The bandy-loads are calculated at 20 cubic feet and the head-loads at 1 cubic foot. Firewood by the head-load is free, so no bandy-loads are ever taken.

173. South Arcot.—*Departmental felling.*—Building timber, 1st, 2nd, and 3rd class, felled and brought to depôt, 2,243 cubic feet at a cost of Rupees 716-10-3.

License and Voucher-felling.—Building timber, 695 bandy-loads = 13,900 cubic feet, and 541 head-loads = 541 cubic feet—total 14,441 cubic feet; firewood, 1,152 bandy-loads and 90 head-loads = 516 tons; bamboos, 706 bandy-loads and 4,548 head-loads; charcoal, 300 bandy-loads and 225 head-loads.

Free felling.—Timber, 2,207 bandy-loads = 44,140 cubic feet; firewood, 740 bandy-loads = 330½ tons; and bamboos, 220 bandy-loads.

174. Madura.—*Departmental felling.*—2,210 cubic feet of building timber felled and brought to depôt.

License and Voucher-felling.—Building timber, 490½ bandy-loads and 74 head-loads = 9,884 cubic feet; firewood, 991 bandy-loads and 69 head-loads = 443 tons; bamboos, 1,399 bandy-loads; and charcoal, 148 bandy-loads and 143 head-loads.

Free felling.—Timber, 133½ bandy-loads and 8,196 head-loads = 10,856 cubic feet; firewood, 370 bandy-loads = 165 tons; and bamboos, 1,094 head-loads.

175. Tinnevelly.—*Departmental felling.*—235 cubic feet felled and stored in depôt at a cost of 235 Rupees.

License and Voucher-felling.—Building timber, 5,130 bandy-loads and 4 head-loads = 1,02,604 cubic feet; firewood, 2,673 bandy-loads and 1,54,590 head-loads = 4,643 tons; bamboos, 63 bandy-loads and 89 head-loads; charcoal, 1,242 bandy-loads and 61 head-loads.

Free felling.—Timber, 392 bandy-loads and 1,070 head-loads = 8,910 cubic feet; firewood, 295 bandy-loads and 4 head-loads = 1,760 tons; and bamboos, 251 head-loads.

176. Anamallay.—*Departmental felling.*—8,325 cubic feet of Rosewood and 3,242 cubic feet of Teak: the former at a cost of 3 Annas and 5 Pies per cubic foot, and the latter at 2 Annas and 7 Pies. In this forest where the trees are of enormous girth, and where our object is to turn out large planks for the Bombay dockyard free of heartshake, skilled axemen from Palghaut are employed, and the trees after being felled are split up into several planks, each of which is free of heartshake; the cost of felling therefore is higher than in other forests, where the trees are only felled and squared and sold in the rough log, or eventually sawn (as a separate item of expenditure) in depôt.

License and Voucher-felling.—Building timber, 55 bandy-loads = 1,100 cubic feet; firewood, 618 bandy-loads and 10,030 head-loads = 499 tons; bamboos, 1,240 bandy-loads and 8,709 head-loads; and charcoal, 356 head-loads.

Free felling.—Agricultural timber, etc., 235 bandy-loads and 11 head-loads = 4,711 cubic feet; firewood, 468 bandy-loads and 109 head-loads = 211 tons; and bamboos, 212 bandy-loads and 892 head-loads.

177. Bolumputty, Sholaykurray, and Chenat Nair range.—*Departmental felling.*—Teak, 1,866 cubic feet; Rosewood, 472 cubic feet; Vengay, 780 cubic feet—total 3,118 cubic feet; and 24 pairs of spokes and felloes felled, dragged and

carted into depôt at a cost of Rupees 1,465-12-0, the actual cost of felling was only Rupees 453-4-0.

License and Voucher-felling.—Building timber, 20 bandy-loads, = 400 cubic feet; firewood, 4,697 bandy-loads and 13,374 head-loads = 2,395 tons; bamboos, 1,254 bandy-loads and 1,401 head-loads; and charcoal, 22 head-loads.

178. MUDUMALLAY.—*Departmental felling.*—22,402½ cubic feet of Teak and Vengay felled at 1½ Annas per cubic foot = Rupees 2,009-7-1.

License and Voucher.—Firewood, 33 bandy-loads = 14½ tons; and bamboos, 361 bandy-loads.

179. SEEGUR AND SUTTIAMUNGALUM.—*Departmental felling.*—6,497½. Maunds of Sandalwood felled and stored at a cost of Rupees 7,581-12-2.

License and Voucher-felling.—Building timber, 238 bandy-loads = 4,760 cubic feet; firewood, 299 bandy-loads = 130 tons, and by contract 500 bandy-loads = 223 tons; bamboos, 35 bandy-loads, and by contract 600 bandy-loads; and charcoal, 96 paras.

180. BHOWANI.—*Departmental felling.*—2,556 Maunds of Sandalwood felled and stored at a cost of Rupees 2,896-11-6.

License and Voucher-felling.—Building timber, 773 bandy-loads = 15,460 cubic feet; firewood, 373 bandy-loads = 166½ tons, and by contract 500 bandy-loads = 223 tons; bamboos, 159 bandy-loads, and by contract 1,000 bandy-loads; and charcoal, 160 paras.

181. COLLEGAL.—*Departmental felling.*—6,247 Maunds of Sandalwood felled and stored at a cost of Rupees 5,049-3-1.

License and Voucher-felling.—Building timber, 188 bandy-loads = 3,760 cubic feet; firewood, 125 bandy-loads = 55½ tons, and by contract 600 bandy-loads =267½ tons; bamboos, 24 bandy-loads, and by contract 800 bandy-loads; and charcoal, 96 paras.

182. SOUTH CANARA.—*Departmental felling.*—1,947½ cubic feet of Blackwood, 12¾ cubic feet of Teak, 169 cubic feet of Junglewood, 7,203 cubic feet of Wild Mango—total 9,342¼, at a cost of Rupees 989-14-10 for felling, and Rupees 560-9-8 for dragging.

License and Voucher-felling.—Reserved timbers, 5,539½ cubic feet and Jungle timbers, 5,176—total 10,715½ cubic feet.

183. WYNAAD.—*Departmental felling.*—5,825 cubic feet of Teak were felled and squared during the year at one Anna per cubic foot, but all the accounts were not adjusted and the accounts for some felling transactions in 1868-69 were settled during this year.

184. NELLUMBUR.—*Departmental felling.*—600 logs, of which two hundred were Teak and four hundred Junglewood, containing about 11,515 cubic feet, were felled during the year, and partially dragged and stored at a total cost of Rupees 249-12-10.

185. SECTION F.—*General Remarks.—Expenditure on planting during the year.*—From the operations recorded under the head of "Plantations and Reserves," it will be seen that the following has been expended in planting during the year.

	Plantations.			Fuel-reserves.		
	RS.	A.	P.	RS.	A.	P.
Salem	1,419	7	0	608	13	0
South Arcot...	...	.....		184	6	0
Cuddapah	5,219	9	5	144	0	0
Bellary	2,384	9	8	.....		
North Arcot...	2,704	8	10	.....		
Kurnool	509	0	0	.....		
Madura	519	11	11	.....		
Mudumallay...	1,366	1	10	.....		
Seegur and Suttiamungalum	859	13	7	.....		
Collegal	74	2	10	.....		
South Canara	895	0	2	.....		
Bolumputty...	.....			455	0	3
Nellumbur Teak Plantation.	18,416	1	0	.....		
Total...	34,348	2	3	1,392	3	3
Total on Planting...	.....			35,740	5	6

186. *Amount of Timber, etc., Firewood, Bamboos, and Charcoal taken from the forests during the year.*

Omitting the district of Gumsur, the following are tables showing the amount of *timber*, firewood, bamboos, and charcoal taken out of this forest during the year. It will be seen that 9,30,010½ cubic feet have been removed from the forests during the year.

Omitting the free felling of firewood in Salem, Cuddapah, and North Arcot, as well as bamboos in Salem of which no record has been kept, 57,434 tons of firewood have been removed, and 33,213½ bandy-loads of bamboos. In addition to the above 16,504½ Maunds of Sandalwood, 11,61,799 lbs. of Red Sanders, and 1,588 telegraph poles, have been cut during the year.

Districts.	Timber.		Firewood.	Bamboos.	Charcoal.
	Department	License and Voucher.			
	C. ft.	C. ft.	Tons.	Bandy loads.	Tons.
Cuddapah	.....	1,36,460	25,989	1,017	75
Kurnool	.....	3,50,920	1,083	7,559	323
North Arcot	.....	31,688¾	2,118	6,392½	562
Salem	8,420	18,887	13,536	8,459	1,814
South Arcot	2,243	14,441	516	933	155
Madura	2,210	9,884	443	1,399	77
Tinnevelly	235	1,02,604	4,643	67	622
Anamallay	11,567	1,100	499	1,675	7
Bolumputty	3,118	400	2,395	1,324	½
Nellumbur	11,515	.....	.....	.....	.....
Wynaad	5,825	.....	.....	.....	.....
South Canara	9,342¼	10,715	.....	.....	.....
Mudumallay	22,402½	.....	14½	361	.....
Seegur	.....	4,760	353	635	5
Bhowani	....	15,460	389½	1,159	8
Collegal	.....	3,760	823	824	5
Total...	76,877¾	7,01,079¾	52,802	31,804½	3,653½
Total Timber paid for...	.....	7,77,957½	.....	.....	.....

Free felling.

Districts.	Timber.	Firewood.	Bamboos.
	C. ft.	Tons.	Bandy-loads.
Cuddapah	24,000	No record kept.	332
North Arcot	3,080	No record kept.	154
Kurnool	11,340	2,165½	379
Salem	44,996	No record kept.	No record kept.
South Arcot	44,140	330½	220
Madura	10,856	165	54
Tinnevelly	8,910	1,760	12
Anamallay	4,731	211	258
Total...	1,52,053	4,632	1,409

187. *Cost of felling.*—The amount expended departmentally in felling in each district is given under the Section *Reserved forests.* The return, however, is of no value as a check in the rates of expenditure of one district against another, as in some districts trees are simply felled and the logs brought out in the rough unsquared; in others, timber is felled and simply squared; in others, felled and sawn, or felled and split up scientifically into planks. Again, though in some districts felling, dragging, carting or floating and storing are all carried on departmentally, and the expenditure under each head forms a separate item, yet in most districts some or all of these items are amalgamated in the accounts, and some of the items are on contract, or it often happens that the department contracts for the delivery of timbers at a certain rate per cubic foot at the depôts, the trees being marked and handed over to the contractors, so that expenditure on the different items could not be separated, and the contract rates of delivery varies, of course, according to the distance or means of communication, etc.

188. *Contractors for firewood, bamboos, and charcoal.*—Colonel Morgan and Lieutenant Walker have been introducing, as an experiment, a system of contracts for the felling of all *firewood, bamboos, and charcoal* in the license and voucher forests: the contractor pays a certain sum annually, to be allowed to collect the authorized seignorage on these articles, the contract being sold by auction or by tenders: he fells nothing himself, but simply issues his passes, receives the seignorage, and sees that these articles are not clandestinely removed from the jungles. This system relieves the department of a great deal of troublesome, unimportant work, and enables the officers to set their Peons, etc., to supervise the more important operations in *Timber*, instead of being obliged to allow most of their time and attention to checking the tickets and passes issued for these articles. The contractor cannot interfere with the free-felling of the ryots as they are provided with free-passes; and if interference was attempted, his contract can be annulled. It also removes much chance of bribery and petty exactions on the side of the Forest Peons. The Revenue Board have lately expressed themselves as opposed to the system, but without, I believe, fully understanding the nature of it, and I have again referenced them on the subject. Their objections were that the contractor might annoy the ryots and exact payments from them or others entitled to timber, etc., free. This could not well occur, if the system is properly understood by the inhabitants and by the Revenue

authorities. The Natives would be less likely to submit to an exaction from a contractor than they would from a belted Peon, who they knew to be a servant of Government; and both the contractor and the ryots would soon learn that a well-founded complaint might cause the former the loss of his contract. The system will, I believe, work well, and be eventually introduced into most of our districts: the contractor furnishes the department with the quantity of the different articles removed monthly.

189. *Status of the department.*—This is at present in a very unsatisfactory state. It having become very evident in the last two or three years that the department was not receiving the support that it is entitled to from the Revenue authorities of the Presidency, and the systematic working of fuel tracts in all districts through which the railway runs appearing almost impossible without an amalgamation of the Local Conservancy Departments under Collectors with Imperial Conservancy, the Officiating Conservator brought to the notice of Government the desirability of this amalgamation, and at the same time advised that the forest officers in charge of ranges should be placed more under the Collectors. The question was referred to the Board, and their recommendation is almost tantamount to an abolition of the department, as they remark that departmental agency can only be required where plantations are in question, and that the large territorial establishments under Collectors are quite sufficient to look after the conservancy and working of the forests of their ranges: for months nothing further has been done, and the officers of the department are all in a state of uncertainty, and the Native Revenue officials are most eager at the thoughts of getting back the administration of the forests. With reference to the recommendation of the Board it may be observed that it would be reverting to the system in force before the Special Department was organized in 1857, and when scarcely any revenue was derived from any district, except the Anamallays; and such a measure may be open to strong objection, when it is known that in almost every important case of timber-stealing or evasion of seignorage, some of the Native Revenue subordinates have been implicated, or at least suspected of having connived: these men are in most cases intermarried with or intimately connected with the timber merchants and the rich ryots; and if the custody of the forests was handed over to them, it is easy to guess the results; besides, it would do away with the present admirable check of the double system, namely, the Forest Department to carry on the executive, and the Revenue Department to receive all payments. Again, the department is at present much under-officered, at least in the districts traversed by the railway. In these districts the work has increased immensely during the last two or three years, but there has been no increase whatever to the executive: in several cases one forest officer has charge of two different collectorates. A separate officer for each collectorate is now urgently required.

190. *The Jungle Conservancy under Revenue authorities.*—A considerable quantity of valuable forest still remains under the Revenue authorities in some districts, and I cannot but continue to point out that it is to the interests of the State that the whole administration of the forests and jungles should be placed under the Special Department in those districts where we have establishments: two different establishments working for the same object must be jealous of one another and antagonistic. Again, this Jungle Conservancy, as it is called, is in most cases left entirely to the

Native Revenue officials: Collectors have no special establishments. And all our officers complain that it is the cause of much smuggling, and there can be very little doubt that the Native Revenue authorities profit considerably by the system. Wherever tracts have been handed over to us the receipts have immediately risen enormously, in some instances 400 per cent.

191. The following is a statement showing the collections from the jungles and forests under Jungle Conservancy during the year 1868-69:—

	RS.	A.	P.
Ganjam	556	2	9
Vizagapatam	1,779	8	9
Godavery...	2,135	5	2
Kistna	12,928	1	5
Nellore	23,745	2	2
Cuddapah	5,599	11	11
Bellary	3,634	14	9
Kurnool	5,988	3	3
Madras	1,966	12	5
North Arcot	11,421	8	3
South Arcot	8,573	9	1
Tanjore	2,074	8	9
Trichinopoly	3,581	2	11
Madura	4,991	11	10
Tinnevelly	16,102	11	0
Coimbatore	1,248	5	1
Salem	37,600	7	4
South Canara	3,737	12	5
Total...	1,47,665	11	3

192. *A Forest School very necessary for young officers.*—A great disadvantage that the department labours under at present is, that all officers and overseers join without any preliminary training, and they are expected to take charge of plantations and conservancy operations, etc., although they may be perfectly ignorant of the very rudiments of Arboriculture or of Vegetable Physiology. There is now an ample field for a Forest School in this Presidency: there are plantations at all elevations from the sea-level up to 7,000 feet, and the cultivation of almost every description of tree is receiving attention. A small Museum of Economic Botany and Forest Products and a Forest Library is almost all that is required: it is believed that officers could be trained to far better advantage in this country than in Europe. There are certainly first rate Forest Schools in France and Germany, but the education is too elaborate for anything required in this country; and a knowledge of French or German is necessary when ultimate requirements call for Hindoostanee, Tamil or Telugu: students, besides, would not become familiarized with a single Indian tree, and it is very doubtful if an intimate knowledge of Oak and Larch, etc., would be of much service to a forester out in this country. The extinction of the old native army has prevented this department as well as many others from looking in that direction for young officers qualified in the native languages and familiar with the natives; but still there are plenty

of young men among the sons of officers and civilians, who are ready to enter the department. It is suggested that none should be admitted as candidates until they have passed the lower standard in at least one of the native languages, and that they should then be trained for a period of five or six months in their profession, and be required to give some attention to the rudiments of Botany and Vegetable Physiology before being permanently appointed to any range. A forest-life in most of our districts is one of great exposure, and jungle fever more or less is a certainty; and the nature of the work compels a solitary residence in jungles far from any Europeans: attention as to the constitution and natural proclivities of candidates is therefore of great importance. It has sometimes been doubted whether a botanical knowledge is necessary for a forester. It is certainly most important in this country where every jungle and forest abound with a great variety of trees and timbers of every description (many quite unknown), and where no reliance can be placed upon the information obtained from the wood-cutters or natives of the district, as in every district there is some ridiculous prejudice against particular timbers, though they may be of great value and in use in other districts; or other timbers though of great value and much prized perhaps in another district may be pronounced valueless and never in use, simply because their ancestors never felled them. To work a forest near the railway economically the trees useless as timber have to be felled out for fuel, and space given to the more valuable species. Again, a forest officer should know every tree botanically, or he can have little idea at what size they reach maturity. It is to be regretted that many of our officers and overseers hardly know a tree in their forests, except those in every day use, and often not even these. Proposals on this question are before Government.

193. *Improvements and Progress during the year.*—The great start that has been made during the year in the formation of plantations and fuel reserves may be mentioned as the chief progress during the year: these operations are all fully detailed under the head of "Plantations and Reserves."

194. Much credit is due to Mr. Yarde, the forest officer of the Cuddapah range, for his successful departmental working of the roots and stumps of the Red Sanders tree. Posts and beams of this tree are in great demand in Madras and its neighbourhood for building purposes in temples and native houses, and the roots and stumps are valuable as a dye-wood. The latter have hitherto been collected on the payment of seignorage at a very small profit, but this year Mr. Yarde undertook it departmentally. 23,22,252 lbs. have been sold for Rupees 26,015-6-2, realizing upwards of 11 Rupees per 1,000 lbs, whereas the seignorage formerly charged was only Rupees 3 per 1,600 lbs. The whole working of this valuable tree is about to be undertaken departmentally.

195. Lieutenant Walker, the officer in charge of Madura and Tinnevelly, has, with the assistance of the Collectors of his districts, induced one of the Zemindars to place the working of his forest-tracts under the department; and other tracts are about to be treated in a similar way on behalf of minors with the sanction of the Court of Wards. This is a great step in conservancy, and in any district in which this can be done, or where private tracts can be leased or bought up by Government, conservancy might be brought to a high state of efficiency. This subject might be brought to the attention of all Collectors, and it is of great importance in all districts traversed by railways. As a rule, private owners do not

make much by their forests, and Government could afford to pay more than they are really worth, as the possession of them would greatly facilitate conservancy, and enable the Special Department to check smuggling much more efficiently.

196. FOREST PRODUCTS.—*Hill-produce*, besides honey, wax, roots, fruits, gall-nuts, ginger, turmeric, cardamoms, dye-powder, and such like products, which, (though they might under proper management be made to yield a large profit to Government,) might yet be collected without injury to the forests, also includes resins, kino, wood-oils, bark for tanning or distillation, and certain fibres, the collection of which in many cases necessitates the destruction of the trees which yield the products. By recent orders* of the Board it would appear that the Forest Department can interfere in no way in the collection of any of these articles by the hill-men or even by ryots, and that the department cannot collect or utilize any of these articles even where they are the yield of dense uninhabited tracts, and are collected by no one. If the collection is in no way under the control of the department, conservancy must suffer to a very great extent: all forest officers are aware of this, and the subject is continually brought to the notice of the head of the department. Ryots being allowed to collect is a new feature. Hitherto the collection may be said to have been confined to the hill-men, who are in almost all cases in the pay of merchants in the low country: if this order of the Board becomes generally known, there are many rich ryots, I believe, who would be glad to enter upon a large trade in all these articles, cardamoms and bark particularly, the result of which it is impossible to foresee. The fact of the department not being allowed to collect in the large tracts of reserved forest, through the agency of the hill-men, can only result in the greater portion of these products rotting in the forests or being burnt, which can hardly be the intention of Government. The Forest Establishments are too small to do much departmentally in this way, and can only attempt it on the contract-system, or through the agency of the hill-men. As Colonel Morgan points out, there are not five hill-men to the square-mile in Collegal, and still less in Bhowani and Suttiamungalum; and there are dense tracts, such as the South Canara ghauts and portions of the Tinnevelly ghauts, etc., where there are no hill-men; it is very clear that if the collection is to be left entirely to this class only a small portion of the produce can ever be collected, the bulk must be burnt or rot in the forest. The Board appear to think that there is no question of the long enjoyment of the right to collect, but it was a Government monopoly previous to 1854, and a regular tax was paid. It is not desirable to re-impose any tax upon the collection, but by judicious management the condition of the hill-tribes might be greatly ameliorated, and the control of all hill-produce brought entirely under the Forest Department which there can be little doubt it ought to be. All forest officers have more or less made complaints that the hill-tribes are cheated to a very great extent by the Chetties in the plains; and it will be seen by a letter from the Collector of Coimbatore, recorded in the Proceedings of the Board already alluded to, that he makes the same complaint. If the hill-men collected systematically under the Forest Department, they would be regularly paid and at remunerative rates. More than this might, however, be effected, as they might be brought into the regular employ of the department, be provided

* *Vide* Proceedings of Board of Revenue, No. 1,989, of 25th March 1870.

with cumblies, and granted small tracts of land for cultivation within the limits of the forests. The subject is one that has remained in an undecided state for a very long time, and forest officers are never certain how to act. The necessity of sanctioning such arrangements as will enable forest officers in time to place it on a satisfactory footing cannot be too strongly urged : it can, however, only be done with the cordial assistance of Collectors; and with that aid there could be little or no difficulty. No rules could well be laid down, which would be applicable throughout the Presidency, as circumstances are very different in almost every district : it is therefore suggested that the arrangements in each district should be made by the Collector in consultation with the forest officer of the range; the former being responsible that the interests of the hill-men are cared for, and the latter, that the forests are not needlessly injured or encroached upon, and that the hill-produce is utilized as far as possible. In some districts the Chetties will probably make out that the hill-men are greatly in their debt ; and cases of this nature will be best handled by the Collector, and may take sometime to arrange satisfactorily, whether the supposed debts are worked out under some supervision which will be necessary to secure fair treatment for the hill-men, or whether they are paid off by the Forest Department. When once matters have been brought into fair training, the advantage to conservancy would be very great, and the condition of the hill-men would be improved ; and in time the sale of these products, under judicious management, would yield a fine revenue, and more than fully cover the cost of the forest establishments in most ranges. The Cochin and Travancore Governments and Mysore make exceedingly large profits out of Cardamoms ; but, although there are valuable tracts of this article of commerce in the Tinnevelly Range, in the Anamallays, and in South Canara, little or nothing is made by them : certain portions of these tracts (in Tinnevelly and Anamallays) are poached upon by the Travancore and Cochin Governments, or rather by hill-men in their employ ; and in other portions the hill-men collect for outside merchants ; and again in other portions, there is no collection, and the produce is not utilized.

197. *Railway Fuel Supply.*—We have only to study works on forestry and on the effects of man and civilization on nature, to see how materially the axe alters the physical characters of a country. In many countries drought and barrenness have followed the too extensive clearing of forests, and fine agricultural districts have become barren regions. The temperature of Europe is known to have become much milder in consequence of the clearance of forests ; and of late years the Governments of France and Germany have been led to consider the conservancy of forests a question of the greatest importance to the welfare of the country : surely the question is one of the gravest import in a tropical climate like India, where the benefits of protection from solar radiation, and of the cooling effect of a transpiration of a large leaf-surface can scarcely be over-rated. The too extensive clearing away of woodland dates in this Presidency from the commencement of railways, and it is now steadily on the increase in all districts traversed by the locomotives; and it may be said that the annual supply of railway fuel taken, in connection with the up-keep of a certain amount of woodland in both the plains and mountains, is now one of the greatest questions of the day with reference to rural economy. Without careful attention to the subject, Salem, Cuddapah, North Arcot, and other districts, through which railways run, will

at no very distant date become as treeless as Bellary : it can, in fact, only be averted by strenuous efforts in the way of conservancy of existing tracts of forest in the plains; the formation and up-keep of reserves and plantations; greater power in the hands of the Forest Department; the cordial assistance of the Revenue authorities; a proper definition of the rights of the ryots; and a strict observance of forest rules and regulations. At present every thing tends in the very opposite direction: the authority of forest officers becomes less and less each year; Departmental Rules are often quite ignored; many Collectors are becoming quite antagonistic to the department; and they almost all consider that every acre of jungle or forest in the plains must disappear before cultivation, and they throw every obstacle in the way of the department reserving tracts or obtaining land for plantations; and the ryots' rights become more and more abused and less under any control. Government have only to look at the amount of timber taken free out of the Salem jungles alone to see that no forests could possibly stand a drain of this nature, except under strict supervision; but by late orders* of the Board, free licenses and passes are being delivered to all heads of villages for issue, and these can be issued without any restriction or supervision on the side of the Forest Department, and it is impossible to say what this may lead to. No ryot will ever consider the interests of posterity or any climatic consideration, however important, of any moment compared with his present convenience; such considerations must come from Government.

Vide paragraph 172.

* Vide Proceedings of the Board, No. 7,193, of 28th September 1869.

198. An amalgamation of local with imperial conservancy might be a great benefit to the country if properly carried out. The greater revenue that would accrue would authorize larger establishments, and large sums might be spent in each district on systematic planting in place of the too-often desultory efforts of the Native Revenue officials in that way. The dearth of wood already leads the ryots in many parts of the country to burn up the manure of their cattle instead of using it for their fields; and the absence of trees necessitates an absence of vegetable manure and boughs and leaves so useful for fertilizing the soil. Under proper organization very much might be done in the way of planting trees between the boundaries of fields and in hedge-rows along water-courses and around wells. The inhabitants will not initiate measures of this nature; but if the department kept up large nurseries, and could issue established seedlings, I believe they would soon see the importance of the measure, and would willingly apply for plants without much more than a word of advice from the Collector.

199. *Sandalwood.*—The Sandalwood tracts belonging to the Government of Madras are confined to certain portions of the Coimbatore and Salem Collectorates: the revenue this year has been Rupees 59,022-12-8. The tree affects hedge-rows and low scrub jungle, etc., and is seldom seen in any regular forest, until a few years ago it was considered a Government monopoly : at least none of the ryots ever asserted a right to fell it when found about their fields and hedge-rows; but upon a Sub-Collector of the Salem District raising the question, the Board and Government* waived any claim to trees, and they are now generally sold standing by the ryots to merchants, etc., for a mere nominal sum. This, of course, gives rise to very

*Vide G. O. No. 1,797, 5th August 1867.

much smuggling from Government tracts and injures the revenue from this article: the tracts in question are not of a nature that can be reserved for all future time against the extension of cultivation, and it must be anticipated that at no distant date there will be no spontaneous Sandalwood that is not private property, as its reservation is not to be entered in any puttah that may be granted in future. In the meantime, plantations of this tree are receiving much attention from the department.

200. *Red Sanders.*—This valuable dye-wood has yielded a revenue of Rupees 26,015-6-2: the tree is only found in the Cuddapah forests and small portion of North Arcot and the most southern parts of the Kurnool hills. It is very abundant in some of the low mountain-forests of the former district: its reckless destruction is wholesale, and has on several occasions been brought to notice. Graziers cut down the young saplings to any extent they choose, to allow their cattle to eat the leaves; and in the present state of the law the Forest Department is powerless to prevent this.

201. *Private forests.*—It has been elsewhere remarked how very important it now is that the State should buy up or lease private forests when possible, or bring them under departmental management for the interests of their owners. In some European Governments forest legislation is extended to the forests of all private proprietors; and it is a question for this Government to consider how far private land-holders can be allowed to destroy their forests and seriously affect the climatic influences on which agriculture may depend, just to amass a sudden fortune from a demand for railway fuel. If the question is one of importance in Europe, how much more must it be in a tropical country like this Presidency, destitute of coal, and subject to periodical deluges of rain. Without special legislation and forethought on these subjects, it is impossible to say what the extension of railways may not effect at some future date. In Tinnevelly, a district into which a railway is now being extended, the whole agricultural interests might be most seriously affected, and possibly ruined by the destruction of the large mountain-forests of the Sevagherry, Chakampatty, and Singampatty Zemindars.* The small clearings already made for coffee-planting in some portions of the chain of ghauts in this district have caused some small streams, previously known as perennial ones, to become perfectly dry at some seasons and rushing torrents at others.

* The legal right of these landed proprietors to the enormous mountain-forests is open to doubt, but is generally admitted.

202. *Forest fires.*—These continue much as usual, and will do so until Forest Rules can be strictly enforced. It may be remarked that one of the chief causes of these fires is, the fact that most forests are open to any one collecting or trading in what is called forest or hill-produce: in the Anamallays it is believed that all the fires are caused by the Chetties who go up from the plains to trade with the kaders (hill-men).

203. *Cardamoms.*—It is to be regretted that this article is not turned to more account. It grows spontaneously in many of our Hill tracts, and with judicious management and some artificial planting, might be made to yield a very handsome revenue after a few years. At present the department make nothing by it. In South Canara some Cardamom tracts within our reserves have been sold by the Collector on a lease of several years for a very small sum, and the amount is

credited to Land Revenue: in portions of the Anamallays, Madura, Tinnevelly, etc., our tracts are poached on by collectors under the Cochin and Travancore Governments; but in a great portion of these forests the Cardamoms simply rot in the forests.

204. *Grazing dues.*—These are seldom under any control, and when let out by Collectors are generally credited to Land Revenue, even if within our reserved tracts.

205. *Dying out of the Bamboos.*—There has been a general dying out during the last two years of the large bamboos *(Bambusa armdinacea)* throughout Wynaad, Coorg, South Canara, and portions of the Anamallays, etc. In all the large tracts of this giant grass about Sultan's Battery and Manantoddy, there was nothing to be seen last cold season but dead culms; not a single living clump; and a great portion died in 1868, the remainder in 1869. Opinions differ as to the duration of the life of this plant, but it is certain that it dies down directly after it flowers. Natives give its duration at different periods, varying from twenty to eighty years: it is probably about thirty years. It may be of interest to future observers to know that a general dying out in the tracts alluded to took place during the last two years. I have known these jungles since 1857, and they have remained unaltered until the last two years. Occasionally a single clump or one or two culms in a clump would be seen flowering or dying out, but these were isolated instances and did not affect the general aspect of the jungle. Now there is not a living bamboo to be seen. The seed has already commenced to come up in many parts, but the young plant grows for a long period (one to three years) like a clump of grass, making only root way, before it begins to throw up its gigantic culms. When once these start they will sometimes grow to the length of 20 or even 30 feet in one month. There will be a great dearth of bamboos in all the forests on the western side of the Presidency for the next two or three years.

206. *Forest Offences, etc.*—The forest crime and convictions in each district are given in the reports of each ranges, which form Appendices to this Report. The data is not of much use, as under the existing state of the law forest crime is differently viewed in each district, and often escapes punishment altogether.

207. *Transmission of seeds, forest-products, etc., to other countries.*—During the year specimens of the timber of some valuable new trees in Tinnevelly have been transmitted to the Secretary of State: seeds of many plants and trees have also been sent to Kew and to different parts of India and the Colonies; and a large supply of seeds of our different forest-trees is being sent as collected to the Mauritius, which island it appears is threatened with drought and barrenness owing to reckless deforestment. The Conservator has during his tours himself collected and dried many specimens of new and interesting plants, selections of which have been forwarded to the Madras Herbarium and to Kew, etc.

208. *Botanical Publications.*—During the year the work on "The Ferns of British India" was brought to a close by the publication of the 23rd or last number. The Conservator is engaged on "The Flora Sylvatica" and "The Icones Plantarum," but considerable delay occurs on the side of the lithographers and publishers.

209. *Engine Firewood.*—30,743¼ tons of firewood have been supplied during the year to the locomotives in the districts of Salem, Cuddapah, and North Arcot, namely, 7,836¼ tons in Salem, 22,318 tons in Cuddapah, and 589 tons in North Arcot.

210. SECTION G.—*Financial results.*—By the annexed table it will be seen that the expenditure for the year has been Rupees 2,86,691 and the receipts 4,95,789 showing a profit to Government of Rupees 2,09,098 or the largest that has yet been realized. There is a deficit of Rupees 1,18,131 in the stock of timber in hand; but this cannot be deducted from the profit for the year, as it has never yet been credited to the receipts. It must also be remarked that the valuation of stock in depôts has never been in any way a correct one; for instance, the large stock in depôts on the Anamallays was some years ago roughly valued at its selling-price in the market, whereas nearly the whole expenditure in this forest for the last two or three years has been incurred in getting this timber to the market The proper financial result is the excess of receipts over expenditure without any reference to a deficit or surplus of stock in hand.

I have the honour to be,

Sir,

Your most obedient servant,

R. H. BEDDOME, Major,

Officiating Conservator of Forests.

Financial Statement of the Forest Conservancy Department for the official year 1869-70, *in comparison with that of* 1868-69.

Forest Ranges.		Charges.		Revenue.		Value of stock of timber on the		Remarks.
		1868-69.	1869-70.	1868-69.	1869-70.	31st March 1869.	31st March 1870.	
		Rs.	Rs	Rs.	Rs.	Rs.	Rs.	
Ganjam ...	Gumsur and Suradah ...	3,296	4,427	6,239	8,019	1,064	1,294	* Rupees 1,545-12-0 and 33,100 embezzled by Overseer Turnbull out of the sale proceeds of the Madura and the Wynaad Forests, respectively, and deducted from the value of the stock on 31st March 1869 have been added since to the same, agreeably to G. O., No. 502, dated 11th April 1870, paragraph 3.
Vizagapatam ...	Golgondah	905	782	378	135	.....	.....	
	Cuddapah	10,360	18,252	38,444	80,288	17,153	18,420	
	Bellary and Cuddapah ...	.....	2,096	.....	.....	.....	.....	
	Kurnool	14,509	10,848	41,046	48,219	2,553	1,806	
	North Arcot	5,188	5,526	11,126	8,236	619	381	
	South Arcot	3,190	2,167	3,221	4,516	94	28	
	Madura	6,134	9,006	10,523	4,418	* 3,434	4,852	
	Tinnevelly	7,001	9,208	13,708	20,489	.....	353	
Coimbatore ...	Anamallay	31,045	38,616	30,489	88,915	1,91,825	1,16,356	
	Bolumputty	8,166	6,246	4,477	13,351	13,672	5,713	
	Mudumallay	49,795	47,380	60,014	47,978	1,74,477	1,46,502	
Neilgherries...	Neilgherry Sholas	5,280	2,914	3,681	.....	.....	....	
	Wellington A. Plantation...	1,518	1,503	108	.....	.....	.....	
Coimbatore ...	Sigur and Sattiamungalum...	7,431	10,700	23,359	21,465	19,403	17,141	
	Bhowany	6,046	5,623	15,856	14,377	1,526	427	
	Collegal	6,806	7,629	15,339	18,828	2,151	7,334	
	Salem...	28,420	29,641	66,820	64,707	7,711	4,004	
	South Canara	21,864	16,963	30,064	30,600	34,740	32,053	
Malabar ...	Wynaad	8,219	11,078	381	10,794	* 55,925	54,244	
	Nellamboor	17,308	18,414	15,906	10,454	32,687	29,995	
	Total...	2,42,481	2,59,019	3,91,179	4,95,789	* 5,59,034	4,40,903	
Pay of the Conservator of Forests inclusive of Establishment and Office Contingencies ...		27,219	27,672					
	Total...	2,69,700	2,86,691					
Deduct Expenditure		.....	.....	2,69,700	2,86,691			
Actual profit to Government		.....	.....	1,21,479	2,09,098			

APPENDIX A.

No. 1,974.

OFFICE OF CONSERVATOR OF FORESTS,
CAMP, OOTACAMUND, *5th March* 1870.

From

MAJOR R. H. BEDDOME,
Officiating Conservator of Forests,

To

R. A. DALYELL, ESQ.,
Acting Secretary to Government, Revenue Department.

SIR,—I have the honour to inform you that I have lately explored the forests of the Golcondah Talook in Vizagapatam District. They comprise a tract known as the Golcondah or Gudem Hills, situated at the south-east corner of the Vizagapatam District, and bounded on the north by the Jeypore Zemindary, on the west and south by the Godavery District, and on the east by the Mugole Zemindary. It has never been surveyed, but may be said to have an area of rather more than 2,000 square miles. It was formerly a Zemindary, bearing the same name as the talook, but was bought in by Government when brought to the hammer for arrears of revenue, and is now the only tract of forest in the district belonging to Government. The forests are almost entirely confined to the hill-tract, there being little timber to speak of about the foot. The roads up the ghauts and about the hills are of the poorest description, being hardly accessible for a pony; and the climate is said to be very feverish throughout the year, except for about three months.

2. Starting from Krisnadevipett I ascended the hills by the Rampolu Ghaut, and spent a fortnight in travelling over a considerable portion of the hills and forests, and finally descended to Narsipatam by the Lumasinghy Ghaut. I was accompanied throughout my tour by Mr. Sewell, the Sub-Collector of the district, who took this opportunity of visiting this portion of his district, and who rendered me every assistance during my visit. The average elevation of the forests and of our encamping ground was a little over 2,000 feet, and the highest elevation we reached was 3,900 feet, which was at the top of the ghaut, just south of the village of Darakondah, and is probably about the highest point of the range.

3. For the Eastern Coast the hills are very rich in forest vegetation, and I was surprised to find very considerable tracts of shola, or moist forest land, about most of the ravines and in the vicinity of the hill-streams. These tracts are not so rich in the number of species of trees, or in the endless variety of under-growth, as similar tracts on our Western Coast; but the forest is evergreen, and decidedly what would be termed shola, and is very rich in ferns, some fifty species having been observed, amongst which were three or four unknown to our Western forests, though all of them Himalayan or Burmese ferns, and two very fine tree-ferns, Cyathea spinulosa and Alsophila glabra. The Rattan abounds, and Barleria cristata forms a great portion of the under-growth, only one, Strobilanthes (S. consanquineus), representing the numerous species found as under-wood in the Western Coast sholas. Moss was very abundant and at a much lower elevation than it is found in our Western forests, and Lycopods were common. The drier forests yield three sorts of bamboo (Bambusa arundinacea, Dendrocalamus strictus or male bamboo, and D. monadelphus), and are very rich in valuable timber, amongst the most valuable of which the following may be enumerated :—

Tectona grandis	Tek.
Pterocarpus marsupium	Yeggi.
Cedrela Toona	Gàli.
Terminalia glabra	Nalla Maddi.
Albizzia stipulacea...	Chinduga.

Lagerstrœmia parviflora	Chinanji.
Schleichera trijuga	Bachá.
Vitex altissima	Nevali adagu.
Acacia sundra	Sandra.
Anogeissus latifolius	Chiri màn.
Nauclea cordifolia	Dudagu.
Do. parvifolia	Kadambe.
Inga Hylocarpa	Konda tangedu.
Albizzia odoratissima	Ganara màn.
Gmelina arborea	Gumudu.
Dalbergia latifolia	Irugudu.
Terminalia Chebula	Karaka.
Bignonia suaveolens	Pàdri.
Eugenia jambolana	Nirada.
Bischofia Rœperianus	Pántá mán.
Albizzia amara	Nalla regu.
Mimusops elengi	Pogada.
Do. hexandra	Pàlà.
Soymida febrifuga	Soomi.
Terminalia Bellerica	Thani.
Grewia tiliœfolia	Thada.
Ougeinia dalbergioides	Wondanapu.
Acacia leucophlœa	Tella tuma.
Diospyros melanoxylon	Tuki.
Melia azadirach	Vepa.
Emblica officinalis	Usirika.
Acacia ferruginea	Wonee.

Most characteristic of the forests about the foot of the hills are the two beautiful, and in other districts rare trees, Anogeissus acuminatus (Pasi) and Albizzia procera (Konda dirasan).

4. I regret to state that Kumri (or hill-cultivation) has here, as elsewhere in our Presidency, made sad havoc with the virgin forest. It is termed Kondapolu, and in every Muttah on the hills acres and acres of forest have been destroyed by it; and it is difficult to find a piece of virgin forest near any of the hill-villages, unless very inaccessible or precipitous. It would be a great thing if this practice could be discontinued, or confined at least to such tracts as have already been cultivated, so that no more virgin forest should be destroyed. I am not sure, however, that it can be put a stop too: the hills are divided into ten Muttahs, which are each under a Dora; and these people have the privileges of engaging in this system of cultivation, but whether to an unlimited extent I was not able to ascertain.

5. About fourteen miles to the south-west of Gudem, and two miles from a small village called Murraypakalu, I found a small tract of teak of superb growth. The area was perhaps not 200 acres, but has evidently been much curtailed by hill-cultivation, and has occupied a larger area at some previous date. There were a good many trees seven to nine feet in girth, and sixty or seventy feet high, with a perfectly straight trunk, and saplings were numerous. The tree was hardly observed at all elsewhere on the mountains; and it is curious that its area should be so restricted; still it is interesting to know that it will grow so well, and this tract should be carefully reserved. The timber could not possibly be brought down to the plains and sold at any profit with the present state of the road, and there is not sufficient to warrant the expense of making a road. As it might be advisable at some no distant date to form a teak plantation in connection with the conservancy of the existing block, the Engineer's Department might report at what expenditure a cart road could be made up to this part of the forest.

6. There is no way of utilizing the fine timber of these mountains at present, without a considerable expenditure in making roads; the timber would cost more getting out than it would sell for, and there is no market. The Godavery forests to the south and west, and the

Zemindary forest to the east and north-east, contain equally fine timber, and are more accessible. There is at present a small forest establishment at a monthly cost of Rupees 60, but the receipts are almost *nil;* the establishment is not of much use. They cannot keep down the Kumari cultivation without the aid of the Revenue authorities; and if this system of hill-cultivation can be checked, it could be done by the Revenue Officers, with the aid of the Police, who are stationed at all the principal places on the hills, without the necessity of a forest establishment, and I would recommend that the establishment be done away with at once, and that the forests be placed entirely under the Collector. He might employ a Maistry or a couple of Peons under the Local Conservancy Establishment, whose duty should be to make periodical visits to the hills, and report on the extent of hill-cultivation, &c. In future years these forests may become of great value, and if the Kondapolu cultivation can be checked, it should be so done at once. From the inaccessible nature of the forest, and the fact of there being no market, the forests require little or no guarding in other respects.

7. Tea, Coffee, and Cinchona might all be grown in parts of these hills, but not as profitably or as well as in Wynaad and many of our Western tracts; and the climate is much against any one making the attempt, so there is not much chance of any land being taken up with this view.

8. Botanically, I did not meet with much novelty, except the ferns above alluded to, which belong to the following species:—Niphobolus stigmosus, Lastrea gracilescens, Diplazium tomentosum, Goniopteris multilineata, and Pteris crenata. I had, however, previously examined the Godavery forests to the south of this tract, and the Kimedy forests to the north, so that much novelty was not to be expected. Specimens of one doubtfully new tree have been forwarded to Kew and to the Madras Herbarium at the Museum. The occurrence of Ougeinia, a valuable timber tree common in the Jubbulpore Provinces, is interesting.

I have the honour to be, &c.,

(Signed) R. H. BEDDOME, MAJOR,

Officiating Conservator of Forests.

APPENDIX B.

No. 29

FOREST OFFICE,
RUSSELLCONDAH, 27*th May* 1870.

From

MR. T. G. FREEMAN MACCALLY,
Overseer of Forests, Goomsoor,

To

MAJOR R. H. BEDDOME,
Officiating Conservator of Forests, Ootacamund.

SIR,—I beg to forward my Annual Report and Accounts for the official year 1869-70.

2. I have visited the Forests under my charge during my monthly tours of inspection, and every precautionary measure has been resorted to during the year as far as possible, with the inadequate means at my disposal, for their supervision and conservancy.

3. To the forests already reported, I would add that of the Chundraghery, Rumbah, and Punchaboothy—they contain the reserved and unreserved kinds of wood. The Saul is here procurable from 3 to 6 feet and a few of 7 to 8 feet girth, saplings innumerable, of all dimensions, within 3 feet girth, sparry in appearance. In the Chundraghery forest I have issued no Licenses; and in that of Rumbah the felling of timber has been only for Government purposes, but since the Assistant Engineer in charge of Department of Public Works, No. 2 Range, Berhampore, intimated that all the work in his range had been stopped by order of Government, I ceased further felling in it.

4. When in the Chundraghery forest, I observed in the centre of it the site of an extinct village, named Poodrunghy, which appears to have been years so, has been re-claimed by forest, and contain a patch of Soondragundy trees (Rottlera Tinctoria), producing the Kamela powder, a commercial dye, and also used in medicine. The Khonds in my range having occupied the sites, by establishing villages in the various forests wherever these trees are to be found, before the operations of the conservancy, this Department is excluded from any right to such trees, and if the powder is required, obliged to be purchased. In the Jugganathprasad Mootah, where these trees are abundant, I made a small advance for the dye to the Chief Khond of Bellagoomah, and was under the impression that I could have got a genuine sample, which I purposed to send for inspection; but I regret to say that the article, when received, was so adulterated and discoloured that I could not receive it, as I could not send an article which I could clearly see was not genuine, the dye was in consequence returned; I am quite convinced that if this article is not collected by the Forest Department from the trees, the genuineness of the article will be scrupulous.

5. With reference to the original site of the extinct village of Poodrunghy, as before stated, containing these trees, I have addressed the Collector, quoting his orders issued in May 1865, that no permission should be granted for cultivation in forests to the prejudice of timber on any account whatever, and as this was a spot reclaimed by forest, hoped that it may meet with his due consideration, so that this extinct village should not be re-established on its original site, but on one out of the forest, if there was any intention to re-establish it, and that the site now reclaimed by forest may remain so, and struck off the Revenue returns as reverted to forest.

6. In the Punchaboothy forest the Bheyro trees. Satin wood, (Chloroxylon Swietenia), were found growing in different patches of one to three feet girth, promising in appearance, has been strictly reserved wherever found. This tree appears to be natural to certain portions

BENGAL SECRETARIAT

only of this forest, which forms a semicircle from Jugganathprasad to Punchaboothy, and thence to Koorchule, and beyond it a mile or two south; the tree gradually becomes stunted and scarce.

7. During my tours in the Kookloobah Mootah, I observed that several Bunjur owners had extended their limits, and usurped forest lands illegally. I brought it to the notice of the Collector, and explained the conduct of the Curnums and Cargees, who appeared to be interested in these illegal acts of their ryots. He has issued orders on the subject, warning the Curnums and Cargees of the Mootahs of Goomsoor with dismissal from appointment if they do not make their reports on the subject in future. Five of the parties concerned in thus illegally possessing forest ground in the Bamamapodro, Gogodo, and Kolingopodu forests of the Kookloobah Mootah, I have prosecuted before the Assistant Agent at Russellcondah, and they have been punished by fines as follows:—one Rupees 50, one Rupees 20, one Rupees 10, and three Rupees 5 each, and the usurped land to revert to forest.

8. Other twelve parties who had been detected extending their limits in the Punchgodo Muttah were prosecuted before the Tahsildar of Goomsur, but the punishment inflicted was trifling, fines varying from one to two rupees.

9. The whole or greater portion of the Goomsur forests, in approximate area superficially about 600 miles, are so interposed by villages in them with their wet and dry cultivation as makes their conservancy most difficult; the inhabitants having the forests at their very doors, and surrounded by it, think nothing of committing depredations in it, which they consider not at all offensive, having been the original occupants, until they are interfered by the Forest Department.

10. Every respect has been paid by this department to existing rights and privileges of the ryots, but when they persistently extend their bounds which they consider as a "Mahmul," usual from time immemorial, this department is obliged to bring them to justice.

11. The Collector has again re-issued orders for the prevention of encroachments by ryots in forests, and he has also published notifications for the information of the ryots, as to the quality of wood which they were privileged for their fuel and re-building of their houses free of taxation, confining the felling to unreserved kinds of wood, and prohibiting the felling of any reserved kinds without the payment of seignorage. The following is the notification published in the *Ganjam District Gazette*. Copies of which have been circulated throughout my range, every Kurnum and Cazee having been furnished with a copy:—

"*Notification.*"

"Great misapprehension appears to prevail regarding the privilege possessed by ryots of cutting fuel or fire-wood, as well as wood required for building and agricultural purposes. The Acting Collector hereby repeats the notification already published from time to time in the *District Gazette* for the information of ryots, that they are at liberty to cut free of taxation fire-wood and fuel and unreserved kinds of wood, as well as trees of stunted growth for building and agricultural purposes in the jungles or forests nearest their villages for their own use, but not for sale. They are on no account permitted to cut any of the reserved kinds of wood detailed below, or young saplings of these species. Should they, however, require any of the reserved kinds of wood they can obtain the same on paying the fixed seignorage.

"Any ryot infringing the terms of this notification will be dealt with according to Law, and the wood cut by him confiscated.

"(Signed) GEORGE ELLIS,
"*Acting Collector.*"

"List of trees which are to be reserved for the value of their wood:—

Saul.	Sohon.	Holondho.
Sissua.	Sahaju.	Kadumba.
Kendhu.	Bandhona.	Mundamundy.
Pia Saul.	Moholo.	Gumbary.
Bheyru.	Kussum.	Kosi.
Pasi.	Doho.	Mahanim.

" List of trees which are to be reserved for the value of their product :—

Achu.	Charu.	Panasa.
Ambo.	Gorinkavato.	Sundragundy.
Borokohe.	Haredha.	Solopo.
Bello.	Kotoko.	Tontooh."
Bouro.	Koeto.	

12. During my tour in the Punchaboothy forest, I examined the frontier of Nowaguddah, a portion of which is claimed by the Zemindar, while the villagers of the Goomsur frontier claim it as theirs from time immemorial. The Zemindary people have felled a line through the forest, as well as the Goomsur people, each defining their boundary. The track felled by the Zemindar extends a distance of nearly fifteen miles, and in breadth varies from twenty to fifty feet broad, while that of the Goomsur people is of a few feet broad, but of equal length. Many trees of the frontier have been felled by the formation of these boundary tracks. The ground claimed varies in breadth from half to three-quarters of a mile, but in length about fifteen miles. The Rajah of Nowaguddah and the Tahsildar of Goomsur were present on the spot, and surveys were made of the tracks in dispute, but I believe from its being unsatisfactory to the Rajah or Zemindar, the case has not yet been settled, but referred to the Collector for decision.

13. Mr. Lavalé, the Kimedy Forest Overseer under the Court of Wards, who was under a course of training at the Nellumbur Teak Plantations, joined me by order of the Collector, and after he had acquired a knowledge of the duties of this office, and the method of operations pursued in these forests, returned to join his appointment at Kimedy.

14. I have established a small experimental plantation, the first in my range, which is at present on a miniature scale. It is situated about two miles from Nowaguddah, and covers a space of ground 150 feet square. The first Teak, Jonesia Asoka, Poinciana regia, Sapindus emarginatus, Sumach Inga dulcis, Acacia Arabica, were planted in it on the 29th November 1869.

15. The following are the trees hitherto unknown in the Goomsur forests I have introduced in it, and they are, I am glad to say, in a hopeful condition, except one of the five teak plants, which had died from the great heat of the weather, the remaining four being quite healthy are thriving, and as soon as the rains set in I have every hope of adding more plants to it :—

4 Teak trees.
10 Inga dulcis.
50 Jonesia Asoka.
20 Poinciana regia.
20. Sapindus emarginatus
1 Sumach.
5 Acacia Arabica (Babool).

The total number of trees planted out is 110 and 200 teak, and a pound of Rottlera tinctoria seeds have been sown in beds. This plantation, small as it is at present, will be gradually extended, should this my first attempt prove successful.

16. 772 bandy-loads of unreserved kinds of wood were permitted free of taxation for the reconstruction of the houses of 189 ryots burnt during the year. The causes of these annual fires having been detailed in last year's report, I shall only now say that they will never be checked so long as stringent measures are not resorted to, to induce the villagers to adopt necessary precautions for its prevention, and that the annual drain on the forest of wood free of taxation for the reconstruction of burnt villages is very great.

17. 521 bandy-loads of reserved woods were felled and removed from the forest departmentally, 4,080¾ bandy-loads of reserved and unreserved wood, and 875 bandy-loads of fire-wood were removed on the voucher and license system, the seignorage of which amounts to Rupees 5,701-10-3.

18. The Department Public Works No. 2 Range, under the charge of the Assistant Engineer, Berhampore, was supplied with timber for the works in his range from this depôt, until his

intimation was received that all the works in his range had been stopped by order of Government, and the Assistant Engineer, Vizagapatam, was also supplied with wood from this depôt, which was delivered at Aska; the former 125 logs, to the value of Rupees 809-4-0, and the latter 150 logs, to the value of Rupees 709, making a total of Rupees 1,518-4-0 on account of wood supplied from this depot, for which valuation vouchers have been received.

19. The Department Public Works No. 3 Range, under the charge of Mr. Supervisor Lever, felled wood of limited dimensions, suited to the works of his range, in the forests under my charge, on licenses issued by this department, and 82 logs were so felled and removed by him, and sixty-four bandy-loads of fire-wood, the seignorage of which by vouchers amount to Rupees 140-14-0. But since the correspondence that has transpired between him and this department in May 1869, when he was offered wood for his works from this depôt pending a reference, did not avail of the offer. Purchases wood for his works from the Runabah Zemindary.

20. Fifty-five persons were prosecuted during the year for forest offences, tried by the European Magistrate and Native Sub-Magistrate, for theft and mischief under the Penal Code, and punished by fines varying from Rupees 50 to 1 Rupee. Of this number only four persons were sentenced to one month's rigorous imprisonment.

21. The health of my establishment has been good, considering that we have had no serious attacks of fever, which was this year of a low form with great emaciation, and soon succumbed to treatment, from which I have occasionally suffered. A few cases of dysentery also appeared, but of no consequence.

22. In conclusion I subjoin the financial results of the present official year. Cash received in the Treasury Rupees 6,360-7-5, with value of timber, &c., supplied Department Public Works, Rupees 1,659-2-0, makes a total of Rupees 8,019-9-5, from which deducting Rupees 4,426-14-9 for Conservancy and Working and Establishment, leaves a balance in favour of Government of Rupees 3,592-10-8, exclusive of timber on hand on the 31st March 1870, valued at Rupees 1,293-12-0.

Financial Results.	RS.	A.	P.			
Sale of timber from depot	572	7	0			
Seignorage on timber, jungle-wood, and fire-wood removed from the forest.....	5,701	10	3			
Sale of confiscated timber and fire-wood ...	86	6	2			
				6,360	7	5
Seignorage on Department Public Works No. 3 Range for 1869-70	140	14	0			
Valuation of Timber supplied Department Public Works No. 2 Range, and Vizagapatam for 1869-70.....	1,518	4	0			
				1,659	2	0
		Total...		8,019	9	5
Expenditure.						
Establishment	2,492	11	9			
Office Contingencies.....	88	1	4			
Conservancy and Working	1,846	1	8			
				4,426	14	9
Balance in favour of Government..... ...				3,592	10	8
Value of Timber on hand, 31st March 1870.				1,293	12	0
Total Financial Results				4,886	6	8

I have the honor to be, &c.,

(Signed) T. G. F. MACCALLY,

Overseer of Forests, Goomsur.

APPENDIX C.

ASSISTANT CONSERVATOR'S OFFICE,
CAMP, CODOOR, 22*nd April* 1870.

No. 33.

From

MR. H. H. YARDE,
Assistant Conservator of Forests,
Cuddapah and North Arcot,

To

MAJOR R. H. BEDDOME,
Officiating Conservator of Forests.

SIR,—I have the honour to submit the Annual Administration Report of the Cuddapah Forests, for the official year 1869-70, with the usual accompaniments.

Introductory Remarks mentioning the name of the Officer in charge, &c.

I have been in charge of these Forests throughout the year, assisted by Mr. Overseers H. Brougham and H. Thistlethwaite. The former was promoted on the 1st May 1869, and placed in charge of the Bellary and Cuddapah plantations. I was necessitated also to employ a separate Clerk, whose pay has been met from the contingent charges, for weighing and keeping the stumps and roots of red Saunders, taken at Codoor and Baulpulley Depots, as my Writer was quite unable to look after the same, owing to the current duties, which has become heavy and arduous. Conservancy in the forest of this District is daily becoming very difficult, and several important matters are now coming forward that will derange peaceable working, unless disposed of in a manner which I shall hereafter suggest. Shrotriemdars, who for years never ventured to derive a revenue from their jungle lands, are now attempting it, this will just afford greater facilities for smuggling from our forests than now exists. It will require extra supervision, and will altogether overthrow the present quiet system, by which the Railway Company are supplied with fuel. The probable extent of Shrotriemdars' lands would be about 5,646 acres; 3,000 of which may be under cultivation, the rest being forested with trees fit only for fuel purposes. The Shrotriemdars claim more land than they are entitled to by the Pymash accounts, and were carting timber away, which may have probably come from our jungles; but I had an interview with Mr. Hardinge, the Head Assistant Collector, about the end of last month, who ordered them to suspend felling until the settlement of the boundaries could be made. I would submit, for your consideration, the subject of a lease, which appears the only possible way we can avoid extra expense and unmolested working.

Measures taken for extending, improving, or protecting the Forests, such as cutting creepers, &c.

In addition to the Baulpulley Reserve, I was desirous of enclosing another tract of jungle, and submitted a survey of a block lying north east, and situated about seven miles from the Codoor Railway station; but as the ryots in its vicinity were against this tract being reserved, much delay has been the consequence. The Head Assistant Collector, about the end of last month, visited the spot in question in company with me, and seemed to think that the objections raised by the Ryots were unreasonable; but in a letter from Mr. Boyle, the Assistant Collector, dated 7th April, on the subject, he says the land consists of 1,433 Acres and 4 Coontahs, and that there will be no difficulty in the way of its exclusive occupation by our Department, provided the land revenue thereon, assessed at Rupees 783-11-0, be paid annually; but I am of opinion we should obtain the land in question for a reserve, free of any tax whatever, as hitherto; besides, the land is a thick forest tract, which has not been known to bring in the above-mentioned revenue for some years back, which is evident from the neglect, and consequently become a forest.

Quantity of Timber of all descriptions felled and stored in Depôts, &c.

8,81,200 lbs. of stumps and roots of red Saunders has been stored in the Codoor, and 2,70,599 lbs., in the Baulpulley Depôts during the year under review.

Elephants and other Cattle and Carts employed in the Forests, and their work.

59 Carts were hired for removing the timber confiscated in the jungles. There is still a small supply, which however will be carted during the present year.

Timber, Fire-wood, Bamboos, &c., removed by Wood-cutters on license.

As per statement supplied to the Conservator.

Timber of all descriptions sold to Merchants from Government Depôts by Tendor or Auction and the quantity of timber to be accounted for.

In last year's timber account there was about 3,676 cubic feet 7¾ inches of timber at Rupees 1-4-0, and 1,585 cubic feet 6 inches of jungle-wood at Rupee 1 per cubic foot. Of the former about 34 feet 8 inches were sold during the year to merchants, which realized Rupees 43-7-4, thus leaving a balance of 3,641 feet 11¾ inches unsold, and of the latter none was sold ; but about 615 feet 6 inches has been destroyed by white-ants and decayed by exposure to the weather, leaving 970 cubic feet as stock on hand. No additions have been made by felling, as there was sufficient for any demands that may have come, and I don't think it advisable, especially in jungle-wood, which sells at Rupee 1, as that description is liable to destruction. 23,22,252 lbs. of red Saunder stumps and roots were also sold, realizing Rupees 26,015-6-2. There is still in Depot 11,51,799 lbs. for sales hereafter.

Outstanding advances.

Outstanding advances amount to Rupees 22-11-9, which is in the hands of the Overseers for the operations of Reddipully, Ooperapully, and Gooty plantations.

Plantations.

Gooty.—This plantation is situated south-east, and about a quarter of a mile from the Railway station, and was started in May last. The extent is nearly 404¾ Acres. The soil is a stiff black clay, with an admixture of sand, salt, and lime, on which scarcely anything, except the Babool, appears to thrive. During the early rains of June, 23 Acres were sown broadcast with the Babool and Acacia Speciosa seeds, which have grown successfully. Large nurseries were also formed, and a trial given to several indigenous sorts of seeds, of which the Inga Saman, Adanthera Povonia, Cassia florida, and Parkia Biglandalosa, I may particularly mention for having grown best. About a quarter of the whole number of trees put out died after being transplanted, and were re-placed. Casuals have been occurring frequently, and very largely throughout the year. I would not make a wide remark in stating that with the number of substitute plants, I could have planted the whole land once over again. The Bengal system, which is in trenches, seems to be the most suitable mode of planting, besides being simple, 1,333 chains have been excavated, and partly sown with seeds.

Condapoorum.—This tract of land is situated on the north bank of the Chittravattey bridge, but no measures were taken to plant it during the year, as the lands were not transferred to our Department. I should be glad to take charge of the same at once, as the planting season is fast approaching, and I shall have the advantage of sowing during the rains.

Camalapoorum.—This plantation is situated south of the Railway Station, on the banks of the Papagnee river, and is in extent 249¾ acres. The soil throughout is sandy and poor. Casuarina, Babool, Acacia Speciosa, and Neem, grow well on it. Nurseries were formed and 15 Acres were sown broadcast with Babool seed, which germinated indifferently, and a portion died out from want of moisture. Here also I have attempted the Bengal system, and 1,823 chains of trenching were excavated during the year, and mostly sown with Babool and seeds of the Inga Dulcis. The seeds in some of the channels have germinated well, and stand from about 1 foot to 3 or 4 inches high. The condition of the plants were very healthy up to January ; but owing to a great scarcity of water and heat, the plants have a less healthy appearance. The Thaputlah Government channel has hitherto supplied us with water, but the ryots of that village have recently objected to the water being used, and have, I believe, petitioned the Collector about it. Our wells hardly supply us with sufficient water, and if the Collector thinks we have no right to use the water of the channel, I am afraid a serious loss will be the consequence.

Codoor.—This plantation is situated east of the Railway Station, on the banks of the Goongina river, and its extent is about 50 Acres. I have already reported what progress this plantation has made, *vide* letter No. 320, dated 8th November 1869. The condition of the trees planted in former years are very healthy, and average in height from 22 feet to 9 feet.

Ooperapully and Reddipully.—The former is situated along the line of Railway, about 7 miles from Codoor, and is about 62 Acres in extent. The latter is situated also along the line of Railway, about 12 miles from the Codoor, and 2 miles from the Reddipully stations, containing 500 Acres. These plantations are conducted under the Bengal system, though the system of planting from Nurseries is not altogether abandoned. 1,087½ chains of trenching at Ooperapully were excavated and sown with Babool and Inga Dulcis seeds, and 761¼ chains at Reddipully, 638 of which have been sown with seeds. The plants on both these plantations seem to be thriving, and should they weather out this hot season I entertain no fear of them. The latter plantation was commenced in October 1869.

Forest Products. None.

Trespasses or damages committed in the Nurseries, Plantations, or Forests, and the result of Criminal prosecution. The result of Criminal prosecution has been satisfactory. There were a great many cases, however, that were not brought before a Magistrate, owing to the difficulty of procuring sufficient proof. Statement A. exhibits the result of Criminal prosecution.

Health of establishment. Fever had been very prevalent during the year. My Overseers were frequently laid up, and I myself had some very sharp attacks. One Peon died, and I was obliged to allow many more to go on leave (on substitutes) to recover themselves.

Any valuable new, or rare plants. None.

Summary of operations. In summarizing the operations of this District, I must allude to the revenue, which has increased since I assumed charge of the Range. The increase has been effected by the sale of stumps and roots of red Saunders, and supply of fuel to the Railway Company. The expenditure has also increased in the Cuddapah accounts, owing to the formation of three new plantations, *i.e.*, one at the Reddipully, one at Camalapoorum, and the other at Gooty, (the latter is in the Bellary District,) which are all additions to my charge during the year under review. The fixed establishment salaries of the Gooty plantation being added thereto, while only the working charges are placed to the Bellary accounts. A tract of land for a reserve was surveyed and planned, and the three above plantations formed, viz. at Gooty, Camalapoor, and Reddipully. The forests were supervised by Peons, who kept Registers of all licenses docketed by them. Ryots have been permitted to remove, free of taxation, the unreserved timbers, and bamboos, &c., for their own or agricultural use, and I am not aware that they suffered any wrong. Peons were dismissed during the year, some for dishonesty, and others for not being able to keep their Register books in the vernacular.

Financial Results.

	Rs.	A.	P.	Rs.	A.	P.
Expenditure.						
Fixed Establishment	8,039	5	9			
Working charges	10,080	8	9			
Contingencies	132	2	6			
				18,252	1	0
Receipts.						
Seignorage on Timber... ...	15,296	14	0			
Do. Fire-wood ...	3,960	15	3			
Engine do. ...	32,613	7	10			
Seignorage on Bamboos ...	508	10	0			
Do. Charcoal ...	210	14	0			
Do. Barks of wood ...	313	0	0			

	Rs.	A.	P.	Rs.	A.	P.
Sale of Confiscated timber ...	1,170	5	0			
Sale of Depôt timber, and red Saunders roots and stumps...	26,053	13	6			
D. P. W.	75	0	0			
Palmirah	80	0	0			
				80,287	15	7
Balance in favour of Government				62,035	14	7
Value of timber in Depot on 31st March 1869, cubic feet 1,585½, @ R. 1 per cubic foot.	1,585	8	0			
Value of timber in Depot on 31st March 1870, 3,676 cubic feet 7¾ inches, @ Rs. 1-4-0 per cubic foot	4,595	12	11			
				6,181	4	11
Add 10,86,293 of red Saunders roots and stumps on 31st March 1869, valued at Rupees 10,972-0-8 in last account; add 23,87,758 pounds collected in 1869-70, in all 34,74,051 lbs.	38,913	2	1			
				38,913	2	1
				45,094	7	0
Deduct timber sold in 1869-70, 34 cubic feet, 8 inches @ R. 1-4-0 per cubic foot ...	43	7	4			
Deduct red Saunders roots and stumps sold 23,22,252 lbs. @ Rs. 11-3-2⅞ per 1,000 lbs. ...	26,015	6	2			
Deduct loss (destroyed by White-ants and decay) 615½ cubic feet @ R. 1 per cubic foot	615	8	0			
				26,674	5	6
Value of timber on 31st March 1870, 3641 cubic feet 11¾ inches, @ Rs. 1-4-0 per cubic foot.	4,552	5	7			
Value of timber on 31st March 1870, 970 cubic feet, @ R. 1	970	0	0			
Value of red Saunders roots and stumps, 11,51,799 lbs., @ Rs. 11-3-2⅞ per 1,000 lbs., ...	12,897	11	11			
				18,420	1	6

I have the honour to be, &c.,

(Signed) H. H. YARDE,

Assistant Conservator of Forests.

A.

Register of the Forest Offences tried before the several Magistrates in the Cuddapah Range, during the official year 1869-70.

Place where, and date when Offences were committed.		Offences.	No. of persons charged.	By whom tried.	Result and Punishment if convicted.	Remarks if any, recorded by trying Officer, as to conduct of Department.	Informer.
Sidhout	30th May 1869.	Stealing Timber.	11	Sub-Magistrate of Sidhout...	Two Rupees fine each or 2 days' imprisonment ...	.....	Constable Mahomed Eusoof.
Do.	Do. ...	Do.	2	Do. ...	Eight annas fine each or five days' rigorous imprisonment...	.....	Do.
Do.	11th Sept. 1869.	Do.	5	Do. ...	Five days' rigorous imprisonment...	.....	Herrojee.
Do.	2nd Nov. 1869.	Do.	2	Do. ...	Eight days' do. ...	.....	Beram Khan.
Do.	Do. ...	Do.	1	Do. ...	Eight days' do. ...	.....	Do.
Do.	18th Jan. 1870.	Do.	1	1st Class Magistrate ...	Dismissed...	.....	Forest Peon Ally Saib.
Royachoty ...	19th June 1869.	Do.	1	Sub-Magistrate of Royachotty.	Three Rupees fine, or 7 days' rigorous imprisonment.	.....	Village Magistrate of Chetteegoontah.
Do.	7th July 1869.	Do.	1	Do. ...	Five Rupees fine or 5 days' rigorous imprisonment...	.....	Police Officer.
Do.	Do. ...	Do.	1	Do. ...	Eight Rupees fine, or 6 days' rigorous imprisonment ..	.....	Do.
Do.	Do. ...	Do.	1	Do. ...	Ten Rupees fine or 7 days' rigorous imprisonment...	.....	Do.
Do.	18th Aug. 1869.	Do.	1	Do. ...	Eight Annas fine, or two days' imprisonment ...	.....	Village Magistrate of Gendchenoo.
Podatoor ...	19th Jan. 1870.	Do.	1	Sub-Magistrate of Podatoor...	Dismissed	....	Village Magistrate of Therasinapully.
Pullumpett ...	21st May 1869.	Do.	1	Do. of Pullumpett	Twenty Rupees fine ...	.....	Forest Peon Uuttoo Saib.
Do.	12th May 1869.	Do.	1	Do. ...	Dismissed...	.....	Peon Chenda Saib.
Do.	18th June 1869.	Do.	1	Do. ...	Do.	.....	Do.

ASSISTANT CONSERVATOR'S OFFICE,
CAMP CODOOR,
22*nd April* 1870.

(Signed) H. H. YARDE,
Assistant Conservator of Forests,
Cuddapah.

APPENDIX D.

ASSISTANT CONSERVATOR'S OFFICE,
NUNDIAL, 6*th April* 1870.

From

THOMAS SHEFFIELD, ESQ.,
Assistant Conservator of Forests,

To

MAJOR R. H. BEDDOME,
Conservator of Forests.

SIR,—I have the honour to submit the Annual Administration Report of the Kurnool Forests for the year 1869-70.

1. *Superintendence.*—The forests have been superintended throughout the year by me. I have been constantly travelling about them, and have visited nearly the whole; I have also inspected all the Tannah Stations along the foot of the hills, and held auction of confiscated timber in upwards of a hundred different villages, extending over five Talooks.

2. *Forest Improvement.*—This has been the first year of true Forest Conservancy in this district; hitherto the whole of the Nallay Mullay forest was open to felling on license, but this year a reserve of about 200 square miles has been formed, and no felling allowed in it. The usual work of cutting creepers, clearing grass from plantation and fire tracing it, has been done by the establishment. The reserved portion of the Nullay Mullay forest has not been demarcated or surveyed, so the above is only a rough estimate of the area; in such a large tract there is of course much useless jungle, which has been included merely to make the block compact for the purpose of demarcation and conservancy. There is, as near as can be estimated by an eye-survey not more than one-eighth of good forest in the reserve.

3. *Description of the Reserve.*—The Nundycunnama Ghaut road forms the boundary on the south, the Yellogode Ghaut road on the north, and the foot of the hills on the east and west, forming a compact block of about 20 × 10 miles. The foot of the hills is about 800 feet above sea level, and the highest point in the reserve about 3,300 feet. The outer slopes of the hills are covered with stunted, inferior trees, and it is only in the higher valleys and plateaus that the forest is rich in well-grown timbers. The most valuable localities are the extensive plateaus met with on these hills, some of which are a mile or more in length, with a breadth of a few hundred yards to half a mile or more; it is on these sites that Teak (Tectona grandis) and Nalla Muddie (Terminalia tomentosa) reach their greatest size, the former has been nearly all felled, and in a walk of a mile not more than two or three large Teak trees are to be seen, and even these old, decaying ones; but in the same walk I counted eleven first-class Nalla Muddie and twenty-nine first-class Yeggie and Jittigee.

4. In a few places in the ravines and on the slopes of the hills Nalla Muddie of fine growth occurs, but I have noticed that, as a general rule, the trees grow best on level or nearly level ground, and that where the gradient is very steep it degenerates into a crooked, stunted, useless thing.

5. There is only about 25 square miles of this 200 that will actually produce first-class timber, *i. e.*, 6 feet in girth, and there is not more than one such Nalla Muddie tree to every ten acres, which will allow 1,600 first-class trees to the 16,000 Acres; the trees on an average will yield 40 cubic feet, making a total of 64,000 cubic feet.

6. Of second-class Nalla Muddie, 4 to 6 feet girth, there are probably one to an acre, yielding on an average 12 cubic feet, which gives a total of 192,000 cubic feet. There are great numbers of Nalla Muddie of smaller growth, from a few inches to 3 feet girth, not less than ten per acre, to take the place of the first and second-class.

7. *Average Annual Yield.*—Having thus given a necessarily rough estimate of the available supply, I will endeavour to estimate the quantity that may be annually taken without doing harm to the forest, or anticipating the supply of future years.

8. There being 1,600 first-class trees, yielding 64,000 cubic feet, I would propose felling 200 trees, or 8,000 cubic feet, yearly, for eight years ; 8,000 cubic feet is as much as there will be a market for in addition to the timber taken on license from the unreserved forests of the district and timber of other kinds from the reserve. At the end of eight years much of the second-class will have attained first-class size, but taking it at its present size there will be a supply for twenty-four years, or in all a supply for thirty-two years, at the end of that time, the trees now 3 feet will have attained 5 to 6 feet girth.

9. *Rate of growth.*—It is reckoned to take 100 years for a Nalla Muddie on good soil to attain a girth of 6 feet, and to contain 40 cubic feet of timber. During the first eight or ten years its growth is rapid, and it attains a height of 35 to 40 feet, with a circumference, at 3 feet from the ground, of 1 foot 6 inches to 2 feet, after which the rate of grow th is slower ; but the average increase in circumference is about 1½ inches per year. There are about 100 trees per acre, including all kinds, which, at the above rate, will give a total yield per acre of about 40 cubic feet, which if again multiplied by the number of acres in the reserve, gives the total of 640,000 cubic feet as the yearly timber production of the reserve. But this is very far from a true estimate, for, as I remarked before, seven-eighths of this is very inferior jungle, and will yield little or no timber ; so deducting the seven-eighths there is left 80,000 cubic feet as the annual timber production of the reserve, of which 10,000 cubic feet are Nalla Muddie.

10. *General Remarks.*—The reserve has been much worked of late years, and I think could not safely bear more felling than I have proposed above ; but I think there can be no doubt that a considerable increase in felling may be made, if necessary, after a few years' careful working.

11. In addition to Nalla Muddie there is Yeggie (Pterocarpus marsupium), Jittigee (Dalbergia latifolia), Toonkie (Diospyros melanoxylon), and Chiriman (Conocarpus latifolius), besides other Jungle timbers. Yeggie is in about the same number as Nalla Muddie, and as it is also a valuable timber and largely used in this district, I would propose felling about the same quantity of it yearly. Jittigee and Toonkie are not much sought after, but Chiriman is in fair demand, and very plentiful of small size. I have considered the reserve as to its power to yield Nalla Muddie, as this is the principal tree of the forest, and the one most used for all house-building purposes ; but calculating the yield of the reserve in all the woods it is 80,000 cubic feet annually, but a market is not likely to arise for this quantity for some years to come.

12. *Forests worked by License and Voucher.*—The whole of the forests of the district, with the exception of the reserve, are open for felling on License, the extent of forest is very great, probably between 2,000 and 3,000 square miles, but most of it is very inferior jungle and no large timber is procurable from it ; still, timber large enough for local wants is plentiful, and the amount taken from it this year is greater than has ever been taken before ; subjoined is a form showing the quantity of timber of all kinds, firewood, charcoal, and bamboos taken.

13. An abstract statement of the quantity of timber, bamboos, &c., taken from the Kurnool forest on license and free during the year 1869-70 has been forwarded to the Conservator.

14. It is thus seen that although a large part of the forest was closed to the public, yet a larger quantity of timber than ever has been taken, and the revenue increased by several thousand rupees. It is not to be expected that future years will be as favourable as this has proved ; there has been an exceptional demand this year, the Madras Irrigation and Canal Company has been supplied with telegraph poles, which will not require renewing for some years ; they have taken a large quantity of timber for centrings and other works. The Railway to Bellary has consumed a great quantity of our wood in temporary works, such as work peoples' houses, scaffolding, pick-handles, &c., these are all extra calls which will not be renewed ; still I believe that we may always depend upon a fair local demand, and that our revenue will never fall very

much short of Rupees 35,000 per year; from my experience of six years in this district, I should say Rupees 35,000 is the standard figure, and represents nearly as much felling as the forests can fairly bear; each bandy-load taken from the forest contains on an average 20 cubic feet. You see the number taken this year is 17,546 bandy-loads, in addition there are the head-loads, the wood burnt for charcoal, and the tops and butts which will not bear cost of removal; this is an enormous quantity of wood, and it requires great care and some experience to prevent waste in felling such a quantity, and the forests must be constantly visited.

15. *Roads.*—The Eranapad forest road is in good order; Rupees 400 was sanctioned for its repair, half from local funds, and half from forest funds; with this amount the jungle growth has been kept down, the two first miles covered with a good coat of gravel and the remainder of the road repaired where it required repair.

16. *Timber felled.*—1,588 telegraph poles have been felled by the Department, and supplied to the Madras Irrigation and Canal Company; they cost the Department Rupees 2,372-8-0, and we received Rupees 3,176 for them, which shows a profit of Rupees 803-8-0 on the transaction.

17. No timber has been felled for our Depôts during the year. I made an agreement with a man at Cumbum to supply 100 beams to the Cumbum Depôt, but he failed to carry out his agreement, and as all public works were suspended, and I was not very likely to find a market for the kind of timber I agreed to receive, I was rather glad he did not fulfil his contract.

18. *Confiscations.*—During the year wood to the value of Rupees 1,050-3-4 was confiscated and sold by auction; of this sum Rupees 262-8-10 has been paid to informers and Rupees 787-10-6 has been credited to Government.

19. The prosecutions on account of timber stealing have been numerous, as will be seen from the annexed register of forest offences brought before the Magistrates. In Cumbum and Markapoor no prosecutions took place, not because there were no breaches of our rules, but because the Sub-Magistrates are not willing to punish for such offences, and because I cannot afford time for my subordinates to go to the Magistrates' Courts and after all have the cases brought up, dismissed.

20. *Timber sold from Depôt.*—416$\frac{8}{12}$ cubic feet of Nalla Muddie timber has been sold to the public from our Depots, and 180$\frac{1}{12}$ cubic feet supplied to the Department Public Works. At the beginning of the year there was 2,042$\frac{8}{12}$ cubic feet on hand; so deducting it from the quantity sold, there now remains in Depot 1,445$\frac{1}{12}$ cubic feet, valued at Rupees 1,806-5-8.

21. *Timber taken on License by Public Departments.*—Eight bandy-loads of timber and ten bandy-loads of bamboos, valued at Rupees 11-2-0, were taken on free pass by the Revenue Department, for erecting pandals for sheltering the people gathered at Maha Mundy for the Siva Ratri feast.

22. *Advances.*—None.

23. *Plantations.*—Contrary to all expectation the small Teak garden which was established at Mutty Conda, and which was last year reported as not thriving, has now made a start, and proves that Teak will thrive very well on these hills, even without much care; so it has been thought advisable to enlarge it. I have accordingly felled 10 Acres of the adjoining jungle and prepared nursery beds for the coming season. In May the sowing, burning, and pitting will be done, and I hope the plants will be fit to plant out in the first burst of the monsoon. In addition to the above I have 15 Acres of land at the foot of the hills, near Woncarum, ready cleared for planting with Sandal plants. A good nursery of half an acre has been prepared, and aquantity of Sandal seed, received from Colonel Morgan, sown; this seed has germinated fairly, and the young plants are in a thriving condition, so that I have no doubt the planting out will be successfully done. I do not think there will be Sandal plants for more than 5 acres, but the remaining 10 acres will be planted with red Saunders' plants.

24. *Avenues.*—The Nursery at Nundial, established by the Collector, is well supplied with young plants for avenue and tope-planting, and fresh seeds have lately been received from Madras and sown. Last year, at the request of the Conservator of Forests, I introduced bamboo pots, and I

find they answer admirably, but are rather more expensive at first than the bamboo baskets formerly used; but as they will last two or three seasons, while the baskets only answer one season, they are cheaper in the end. Large bamboos, fit for pots, are only procurable in the centre of these hills, at least 30 miles from Nundial, and by the time they are brought here and prepared they cost at least eight pie each; but as I can get clay pots made for nine pies each, and as these will, with care, last many years, I think it would be best and cheapest to use these, and have requested the Collector to allow me to have about 1,000 made for trial.

25. Last month, when I was at Cumbum, I had the pleasure of inspecting a very fine tope of eight or ten acres extent, near that town, lately planted by the Head Assistant Collector; the tope is situated on the main road to, and about one and half miles south of, Cumbum. The soil is good, and the plants, Tamarind (Tamarindus Indica) and Yapa (Azadirachta Indica) are in a thriving condition, and as there is an unfailing supply of water at hand I have no doubt the plants will grow fast if properly protected from cattle. A small tope has also been formed close to the Government Chuttrum at Kistunchuttypilly at the foot of the Nundycunnama Ghaut, in the Cumbum Talook.

26. *Health of Establishment.*—Fever has not been very bad; at the beginning of the year I lost two servants from cholera, but since then the health of the establishment has been pretty good.

Financial Results.

Receipts.

	Rs.	A.	P.	Rs.	A.	P.
I.—Sale of timber and Sandal-wood brought to Depôt by Government agency	3,696	13	4			
Value of timber supplied to Department Public Works	237	4	4			
II.—Sale of timber, fire-wood, bamboos, and charcoal removed from the forest by purchasers including seignorage	43,393	1	10			
Sale of confiscated timber, deducting 50 per cent. of the sale proceeds paid to the informants of clandestine felling, *vide* G. O., No. 921, dated 4th May 1865	787	10	6			
VI.—Sale of fruits and other minor forest produce ...	104	2	6			
VII.—Miscellaneous receipts				48,219	0	6

A.—Conservancy and Working.

Expenditure.

I.—Timber expenses for felling, clearing, sawing, and transport of timber by land or water to Depôts	2,465	6	0			
II.—Purchase of elephants, cattle, tools, and plant ...	72	4	0			
III.—Feed and keep of elephants and cattle	331	9	10			
IV.—Rent of leased forests and seignorage paid for timber felled in leased forests	...	...	...			
V.—Charges connected with the collection of revenue on fruits, &c.	...	...	...			
VI.—Plantation	341	0	0			
VII.—Forest work, viz., cutting creepers, protection of forest trees against fire	...	...	...			
IX.—Experiments to test the value of timber of different kinds...	32	0	0			
X.—Communications, buildings, and minor works ...	348	10	0			
Total of conservancy and working ...				3,590	13	10

B.—Establishment.

	Rs.	A.	P.			
I.—Salaries—						
2. Pay of Executive Officers	2,400	0	0			
3. Pay of Office Establishment	672	0	0			
B.—*Executive.*						
4. Forest Conservancy Establishment	3,108	3	2			
5. Timber and working Establishment						
6. Deputation and special allowances						
II.—Travelling allowances—						
2. Executive Officers	720	0	0			
3. Subordinate Establishment	180	0	0			
III.—Contingencies—						
4. Sundries...	177	4	0			
Total of Establishment ...				7,257	7	2
Total of Expenditure				10,848	5	0
Balance in favour of Government.				87,370	11	6
Balance of timber in Depôt on 31st March 1869.	2,553	5	4			
Add Timber felled during 1869-70	3,176	0	0			
Total ...	5,729	5	4			
Deduct timber sold in 1869-70	3,922	15	8			
Balance of timber on hand						
Particulars of timber on hand and valuation per cubic foot.						
1,445½ cubic feet valued R. 1-4-0 per cubic foot on hand on 31st March 1870	1,806	5	8			
Deduct balance of timber in Depôt on 31st March 1869 ... ... ,,, ...	2,553	5	4			
Decrease in Stock...				746	15	8
Financial results in favour of the Kurnool forests.				36,623	11	10

I have the honour to be, &c.,

(Signed) T. SHEFFIELD,

Assistant Conservator of Forests.

Register of Forest Offences tried before the several Magistrates in the Kurnool District, during the year 1869-70.

Place and date where offence was committed.		Offence.	No. of persons charged.	By whom tried.	Result and Punishment if convicted.	Remarks, if any, recorded by trying Officer as to conduct of Department.	Informers.	Remarks of the Forest Officer.
Atmacoor	12th April.	Stealing Timber.	1	Sub-Magistrate of Atmacoor	Fined Rupees 10.	...	Chinathumbiah.	
Do.	Do.	Do.	8	Do.	Fined Rupees 5.	..	Vungalar Reddy	
Do.	8th April.	Do.	2	Do.	Fined Rupees 15 each.	...		
Nundial	6th do.	Do.	3	Sub-Magistrate of Nundial.	Fined Rupees 7 each or 7 days' imprisonment.	...	Duffadar Dada Saib.	
Atmacoor	22nd do.	Do.	2	Sub-Magistrate of Atmacoor.	Fined Rupees 7.	...	Daffadar Dada Saib.	
Do.	Do.	Do.	1	Do.	Imprisoned for 6 hours.	...	Cambalapillay Reddy.	
Nundicotcoor ...	17th do.	Do.	7	Sub-Magistrate of Nundicotcoor.	Fined Rupees 3 each.	...	Ragavandia-charry.	
Nundial	25th do.	Do.	2	Sub-Magistrate of Nundial.	Fined Rupees 2 each.	...	Peon, Kadar Khan.	
Sirwell	15th May.	Do.	1	Sub-Magistrate of Sirwell.	Fined Rupees 3.	...	Sunginnah ...	
Nundial	25th do.	Do.	4	Sub-Magistrate of Nundial.	Dismissed; not proved.	...	Village Curnum.	
Do.	5th June.	Do.	1	Do.	Fined Rupees 10 or 7 days' imprisonment.	...	Vencataramoo-doo.	
Do.	8th do.	Do.	4	Do.	Dismissed; not proved.	...	Peon, Kadar Khan.	
Atmacoor	4th do.	Do.	3	Sub-Magistrate of Atmacoor.	Fined Rupees 65.	...	Peon, Pooliah.	
Do.	Do.	Do.	6	Do.	Dismissed; but timber confiscated.	...	Vitoba Row .	
Nundial	8th do.	Stealing Charcoal.	2	Sub-Magistrate of Nundial.	Dismissed; but charcoal confiscated.	...	Madapooram Reddy.	

Do.	12th do.	Stealing Timber.	4	Do.	Dismissed; but timber confiscated.	...	Police Constable.
Do.	12th do.	Do.	1	Do.	Fined Rupees 10 or 7 days' imprisonment.	...	Asstt. Conservator of Forests.
Do.	Do.	Do.	1	Do.	Fined Rupees 5, or 7 days' imprisonment.	...	Do.
Atmacoor	17th June.	Stealing Bamboos.	10	Sub-Magistrate of Atmacoor.	Fined Rupee 1 each.	...	Peon, Gorapah.
Nundial	5th do.	Stealing Timber.	1	Sub-Magistrate of Nundial.	Dismissed.	...	Poolah Reddy.
Do.	12th do.	Do.	1	Do.	Do.; but timber confiscated.	...	Do.
Do.	18th do.	Do. Bamboos.	1	Do.	Dismissed; not proved.*	...	Peon, Mouim Saib.
Do.	1st do.	Do. Wood.	5	Do.	Do. do. ...	...	Pesaroy Reddy.
Do.	Do.	Do. Timber.	4	Do.	Do. do. ...	...	Do.
Do.	Do.	Do.	4	Do.	Do. do. ...	...	Do.
Do.	15th June.	Do.	9	Do.	Fined Rupees 3 each.		Rungasawmy.
Atmacoor	17th do.	Do.	5	Sub-Magistrate of Atmacoor.	Fined Rupees 23. ...	...	Naganah. ...
Nundial	19th July.	Stealing Wood.	2	Do.	Fined Rupees 3 each. ...	...	Vencatanah ...
Do.	6th August.	Do.	2	Do.	Dismissed, but timber confiscated.	...	Kuttoobady, Vencatah.
Do.	13th do.	Do.	7	Do.	Fined Rupees 2 each.	...	Ramsing ...
Eranapad	7th do.	Do.	1	Sub-Magistrate of Nundial.	Fined Rupees 3.	...	Peon, Mossim Saib
Thumbadapilly ...	17th Septr.	Stealing Charcoal.	7	Do.	Fined Annas 4 each, or 1 day's imprisonment.	...	Forest Peon ...
Pesaroy	16th Nov.	Stealing Timber.	1	Do.	Fined Rupees 10, or 7 days' simple imprisonment.	...	Village Curnum.
Do.	1st Dec.	Do. Wood.	1	Do.	Fined Rupees 3 or 4 days' simple imprisonment.	...	Police Constable
Yalloor	3rd do.	Do.	2	Do.	Dismissed for want of proof. ...	...	Police Head Constable.
Madapooram	8th Jany.	Stealing Timber.	1	Do.	Do. do. ...	...	Duffadar, Dada Saib.
Singavaram	20th do.	Do.	10	Do.	Fined Rupees 2 each.	...	Duffadar, Emam Saib.
Do.	Do.	Do.	3	Do.	Do. the first prisoner Rs. 5, 2nd and 3rd prisoners Rs. 3 each.	...	Do.

* These 4 cases came from Atchiah's durkast and from which we have never been able to obtain convictions.

Register of Forest Offences tried before the several Magistrates in the Kurnool District, during the year 1869-70.

Place and date where offence was committed.		Offence.	No. of persons charged.	By whom tried.	Result and Punishment if convicted.	Remarks, if any, recorded by trying Officer as to conduct of Department.	Informers.	Remarks of the Forest Officer.
Eranapad	20th Jany.	Stealing Timber.	2	Sub-Magistrate of Nundial.	Fined Rupees 3 each.	...	Peon, Mossim Saib.	
Atmacoor	21st Feby.	Do.	1	Sub-Magistrate of Atmacoor.	Dismissed; but timber confiscated.	...	Village Reddy.	
Do.	22nd March.	Do.	3	Do.	Fined.			
Madapooram	12th Do.	Do.	1	Sub-Magistrate of Nundial.	Fined Rupees 30.	...	Peon, Mahomed Kassim.	
Streeringapooram.	2nd Nov.	Do.	1	Sub-Magistrate of Sirwell.	Dismissed for want of proof.	...	Condiah.	

(Signed) T. SHEFFIELD,
Assistant Conservator of Forests.

APPENDIX E.

No. 32.

ASSISTANT CONSERVATOR'S OFFICE,
CAMP AT CODOOR, 22*nd April* 1870.

From

MR. H. H. YARDE,
Assistant Conservator of Forests,
Cuddapah and North Arcot,

To

MAJOR R. H. BEDDOME,
Officiating Conservator of Forests.

SIR,—I have the honour to forward the Administration Report of the North Arcot Forests for the official year 1869-70, together with the accounts.

Introductory remarks, mentioning the name of the Officer in charge, etc.

2. Mr. Stafford temporarily succeeded Mr. Brougham, who was promoted and placed in charge of the Bellary and Cuddapah Plantations on the 1st May 1869, and had charge of these forests until the 31st September 1869. Mr. Costello was then appointed on probation ; but as he did not work well, his services were dispensed with on the 30th March 1870, and Mr. Stafford reappointed. The establishment sanctioned in G. O., No. 213, dated 25th January 1869, was not entertained, as the Collector objected to the transfer of the Gooriathum jungles.

Measures for extending and improving of the Forests, etc.

3. The License system is still in force, and there are no reasons for changing it. The jungles are very straggling, and timbers of large scantling cannot be obtained without difficulty. Some parts of the forests have been rested, while other parts were worked, and the Thellay jungles, owing to the deforestment of them in former years, have been reserved ; but bamboos and firewood have been removed out of them. The low scrub jungles, which extend for a few miles, would, if cleared, be a suitable site for a plantation. The northern, southern, and western sides are surrounded by hills, and there will be no necessity for fencing it. The eastern side will have to be enclosed, and it may be done at a small outlay, and the Bengal system of planting be adopted. I enclose a sketch illustrating the above, and shall place myself in early communication with the Collector about the matter. The Gooriathum jungles and Shamulkona (Triputty), which should have been included in this Forest Range, are now under the consideration of the Government, and, if given over, the great facilities for smuggling which now exists would be prevented, and measures taken for improving them.

Quantity of timber felled and stored in Depôt.

4. None.

Elephants and other cattle and carts employed in the Forests.

5. Twenty-one carts were hired for conveying confiscated timber, etc., from the jungles.

Timber, firewood, bamboos, etc., removed by wood-cutters on license.

6. Statement A. exhibits the value of timber, bamboos, etc., removed from the forests, during the year, on license. The Revenue Department grant free passes, and intimate the same to this department. The Forest Peons deal with these as they would with an ordinary license, and return the same as soon as the bandies have been sold off.

Number and amount of confiscated logs, and whether felled clandestinely or not.

7. Ninety-eight carts of Timber, etc., were confiscated during the year. Clandestine felling is still rife, and the timber, etc., usually carried away by head-loads. Carts are seldom employed in this district to remove wood clandestinely felled, as the chances of detection are much greater.

443½ cubic feet was sold by public auction, and realized Rupees 229. No timber remains in stock now, and there seems no necessity for having a supply in Depôt, as the local markets are many, and competition great.

Timber of all descriptions sold to Merchants from Government Depôts, etc.

Timber supplied to Public Departments.

9. None.

10. Outstandings amount to Rupees 48-10-11, this sum was advanced to the Overseer for carting confiscated timber and for planting operations, and could not be worked out during the month which closed the official year.

Outstanding advances.

PLANTATIONS.

11. About 21,000 trees have been planted out during the year, No. I. Plot being entirely finished. Large nurseries have been formed in both places, and several new wells sunk. The condition of the trees planted in previous years are very healthy. The nurseries contain nearly a lac of plants, most of which are strong enough to be put out, but delayed in consequence of the season.

Trivellum.

12. A few acres were added to No. I. land during the year ; the whole of the ground had been planted. Many casuals occurred, and were replaced. The condition of the trees planted in previous years are healthy and good. No. II.—This was a small piece of land, about 8 Acres in extent, which was taken up for the trial of Casuarina. The whole of it has been planted. The condition of the trees previously planted are good.

Ammerdy.

13. The Rajilapodee (*Rottleria Tinctoria*) is still collected by the Mallayalees (Hill tribes), and eagerly bought up by merchants. This is the most useful produce of these jungles, and next to it may be mentioned the Tamarind fruit, which, in the Thellay jungles, has been farmed out. Some Palmirah trees, which stand on the Trivellum Plantation, are also farmed out, and the proceeds from both of these are credited in the accounts of the Collectorate.

Forests Product.

14. Statement B. exhibits the results of criminal prosecutions. Convictions have generally been obtained, and the various Overseers who were in charge of these Forests have, I must say, taken trouble. It frequently happens that though there is no doubt of crime, yet, in consequence of insufficient legal proof, the cases are dismissed by Magistrates, and over such results Overseers are apt to tire, and be less mindful. Magistrates often differ very much in respect of cases of a same nature. The Magistrate will take cognizance of a case which another would not, and transgressors often coming off victorious, are led to take upon themselves another trial of their mischievous proceedings. A Forest Act would remove much difference of opinion, and I hope the time is not far when this important matter will receive the consideration it deserves. The health of the establishment, on the whole, has been good. Fever was rather prevalent.

Trespasses or damages committed.

Health of Establishment.

Any rare, valuable, or new plants discovered.

15. None.

16. The revenue has decreased owing to the completion of the Central Jail and other minor works in the district, and also in consequence of the tax on firewood, which has been increased. The large expenditure is owing principally to the large planting operations. Two sites were selected for plantations, one on the north bank of the Palar river at Trivellum, and the other on the south bank of the same river at Veerinjeepuram. Neither of the sites have been enclosed, as compensation money has not been settled. Great attention has been paid to the wants of the ryots, and they have been allowed to remove from the forests, free of tax, timber, bamboos, etc. *Vide* statement enclosed. I conferred with the Collector some time ago about introducing a tax of 3 pie per head-load of fuel taken for sale ; but the Collector disapproved of the same. I may put down 500 head-loads as being daily removed from the forest without tax. Confiscations only sold in the Chendragherry

Summary of operations.

Talook. I have been unable to give this range the attention it requires, owing to other new plantations in the Cuddapah and Bellary Districts, and formation of reserves, etc. The auction of confiscated timbers, etc., was also postponed, during the year, in consequence in two talooks.

Financial Results.

	Rs. A. P.	Rs. A. P.
Expenditure.		
Fixed establishment	2,736 0 0	
Working charges	2,732 6 2	
Contingencies	57 6 0	
		5,525 12 2
Receipts.		
Seignorage on timber...	2,310 7 0	
Do. Firewood	1,467 12 0	
Do. Bamboos	3,196 4 0	
Do. Charcoal	629 6 0	
Do. Barks of woods	113 10 0	
Sale of confiscated timber in Chendragherry Talook ...	280 8 0	
Do. depôt timber	238 6 0	
		8,236 5 0
Balance in favour of Government...		2,710 8 10
Value of timber in depôt on 31st March 1869—		
226 cubic feet 5 inches at Rs. 1-8 per cubic foot ...	339 10 0	
223 cubic feet 8 inches at Rs. 1-4 per cubic foot ...	279 9 4	
		619 3 4
Deduct timber, 6 cubic feet 3 inches, sold to private individuals at Rs. 1-8, per cubic foot	9 6 0	
Do. timber sold by public auction (*i.e.*) 220 cubic feet 2 inches at Rupees 1-8, and 223 cubic feet 8 inches at Rs. 1-4 per cubic foot, in all 443 cubic feet 10 inches ...	229 0 0	
		238 6 0
Loss ...		380 13 4
Balance and value of depôt timber on 31st March 1869—		
1,585½ cubic feet at Rupee 1 per cubic foot, Rs. 1,585 8 0		
3,676 cubic feet and 7¾ inches at Rs. 1-4-0 per cubic foot ... ... ,, ... 4,595 12 11		
	6,181 4 11	
Balance and value of stumps and roots of redwood on 31st March 1869—		
10,86,293 lbs. at Rupees 11-3-2⅞ per 1,000 lbs. ...	12,165 8 3	
Add timber felled during the year 1869-70		
Add stumps and roots of redwood collected during the year 1869-70.—23,87,758 lbs. at Rs. 11-3-2⅞ per 1,000 lbs	26,747 9 10	
		45,094 7 0
Deduct sale of 23,22,252 lbs. of stumps and roots of redwood during the year at Rupees 11-3-2⅞ per 1,000 lbs ..	26,015 6 2	
Deduct sale of 34 cubic feet 8 inches of depôt timber at the rate of Rupees 1-4-0 per cubic foot...	43 7 4	
Deduct 615¼ cubic feet of depôt timber destroyed by white-ants at the rate of Rupee 1 per cubic foot	615 8 0	
		26,674 5 6
Balance on 31st March 1870		18,420 1 6

Particulars of this Balance.

	Rs.	A.	P.
Depôt timber 3,641 cubic feet and 11¼ inches at Rupees 1-4-0 per cubic foot	4,552	5½	7
Depôt timber 970 cubic feet at Rupee 1 per cubic foot ...	970	0	0
Redwood stumps and roots 14,51,799 lbs. at Rupees 11-3-2⅞ per 1,000 lbs.	12,897	11	11
Total ...	18,420	1	6

(Signed) H. H. YARDE,
Assistant Conservator in charge of Cuddapah and North Arcot Forests.

Camp Ghooty,
13*th May* 1870.

STATEMENT A.

Statement shewing the Revenue of the North Arcot Forests, for the official year 1869-70.

Months.	Timber.	Firewood.	Bamboos.	Charcoal.	Barks of Wood.	Sale of confiscated timber.	Sale of Depôt timber.	Total.
	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.
April 1869	251 0 0	191 3 0	296 13 0	88 11 0	20 0 0	.....	9 6 0	857 1 0
May ,, ...	227 0 0	124 10 6	304 0 0	67 6 0	12 6 0	.....	.....	735 6 6
June ,, ...	177 0 0	200 6 0	178 5 0	104 1 0	6 4 0	.....	.....	666 0 0
July ,, ...	180 0 0	166 13 0	284 1 0	44 2 0	13 12 0	....	.....	688 12 0
August ,, ...	169 0 0	88 1 0	111 7 0	98 2 0	6 4 0	.....	.....	472 14 0
September ,, ...	204 0 0	41 5 6	240 4 0	33 9 0	7 8 0	.....	.....	526 10 6
October ,, ...	189 0 0	162 0 0	395 6 0	57 13 0	8 2 0	.....	.....	812 5 0
November ,, ...	185 15 0	80 3 0	293 8 0	26 10 0	8 12 0	.....	.....	595 0 0
December ,, ...	207 4 0	65 14 6	315 15 0	39 7 0	7 8 0	.....	229 0 0	865 0 6
January 1870	187 4 0	88 11 0	230 15 0	16 4 0	6 4 0	.....	.....	529 6 0
February ,, ...	118 0 0	118 8 0	246 2 0	31 6 0	4 6 0	.....	.....	518 6 0
March ,, ...	215 0 0	140 0 6	299 8 0	21 15 0	12 8 0	280 8 0	.....	969 7 6
Total...	2,310 7 0	1,467 12 0	3,196 4 0	629 6 0	113 10 0	280 8 0	238 6 0	8,236 5 0

CAMP CODOOR,
22nd April 1870.

(Signed) H. H. YARDE,
Assistant Conservator of Forests.

Form B

Register of the Forest Offences tried before the several Magistrates in the North Arcot Range during the official year 1869-70.

Place where and date when offences were committed.		Offences.	Number of persons charged.	By whom tried.	Result and punishment if convicted.	Remarks, if any, recorded by trying officers as to conduct of defendant.	Informers.	Remarks.
Chendragherry.	4th April 1869.	False information.	1	1st Class Sub-Magistrate of Chendragherry.	Dismissed	.....	Forest Peon.	
Aurisumpett ...	1st February 1870.	Stealing timber.	1	Sub-Magistrate of Vellore.	Do.	.....	Do.	
Do. ...	7th March 1870.	Do. ...	1	Do. do. ...	Do.	.....	Do.	
Do. ...	19th do. ...	Do. ...	2	Do. do. ...	25 Rupees fine or 15 days' imprisonment.	.....	Do.	
Thellay ...	24th February 1870.	Do. ...	3	Do. do. ...	30 days' imprisonment for each.	.....	Do.	
Polloor ...	21st April 1870.	Do. ...	1	Do. of Polloor ...	One month's rigorous imprisonment.	.....	Alley Saib.	
Do. ...	1st August 1869.	Do. ...	1	Do. do. ...	Dismissed	.....	Forest Peon.	
Do. ...	October 1869.	Do. ...	1	Do. do. ...	Do.	.....	Do.	

CAMP CODOOR,
22*nd April* 1870.

(Signed) H. H. YARDE,
Assistant Conservator of Forests.

APPENDICES F. AND G.

DEPUTY CONSERVATOR'S OFFICE,
CAMP AT SALEM, *9th May* 1870.

From

H. T. KNOX, Esq.,
Asst. Collector in charge of Salem and South Arcot Forests,

To

MAJOR R. H. BEDDOME,
Officiating Conservator of Forests.

SIR,—I have the honour to transmit the following Memorandum :—

1. There are in the Salem Range four Plantations and Nurseries. Plantation No. I, at Mullapuram, was sown with babool, broad-cast. The plants are now from six inches to three feet in height. An attempt was made to plant out Vepamaram seedlings ; the first month of sun without rain killed nearly all. An expenditure was being incurred in January of 30 Rupees a month in an ineffectual endeavour to keep them alive by watering. The soil is the black cotton, and is quite unfit for the Vepamaram. There is in the plantation a nursery in which the seedlings of Vepamaram and Karoorela are growing well. I regret to have to inform you that the grass caught fire from sparks from the engines on the 27th ultimo and was burnt. The trees were however not much damaged. The expenditure was Rupees 842-7-3. Plantation No. II., on the Shevroy Hills, is a failure in my opinion. The soil is very rocky, and the plantation is on the side of the hill. It does not give trees a fair chance of doing their best. There is only a small piece of good soil which is used as a nursery. There are in the nursery a few Teak seedlings and some Belgaum Walnuts from 4 to 6 feet high. The eucalyptus seedlings are growing up in the nursery, and some have been planted on the face of the hill, but they do not seem very healthy. The expenditure during the past year was Rupees 278-8-10. There is also a nursery in the compound of the Forest Office at Salem. On this nursery Rupees 97-4-8 have been spent. The trees planted out are a few Teak and a good many Belgaum Walnuts, Vepamarams, Sandalwood, and Toon. I am unable to understand why this nursery was formed, as there is no place at hand to which the seedlings can be transferred when they grow too large for the nursery. A plantation at Putchoor was formed at the beginning of the year 1869. The expenditure during the past official year was Rupees 201-2-3. The trees are still only seedlings, the fencing is nearly completed.

There are no plantations in the South Arcot Range.

Reserves.

2. The A., B., and C. Reserves are on the line of rail, between the Mullapuram and Shevroy Hill Stations, and are intended for the supply of Railway fuel.

The A. tract is about Acres 2,560 in extent. On it has been spent the sum of Rupees 329-2-3. The B. tract measures about 964 Acres, and has cost Rupees 60. C. tract measures 320 Acres, on which Rupees 99-10-9 have been spent. In it 45,022 square yards of ground and 750 running yards of trenches have been planted with Babool. These tracts are all fenced.

The Reserves D. and E. are situate near Jolarpet on the Bangalore Railway. They will be fit for felling in about three years. They are intended only for supply of Railway fuel. The expenditure on these reserves amounted to Rupees 120 during the past year.

Their extent is respectively 1,600 Acres and 2,400 Acres. They have been fenced.

In Gingee seven fuel tracts have been reserved and roughly demarcated at a cost of Rupees 184-6-0. They are intended to meet the requirements of the railway, should one be made through the district, and of the French Settlement of Pondicherry. They measure about 11,500 Acres.

Reserved Forests.

3. The Reserved Forests of this Range, which are worked departmentally, are those of Denkenekotta and Tripatur Overseers' Ranges. These forests are also worked by License and Voucher. Expenditure on felling and cartage cannot be given in separate items, because the timber is felled, cleaned, and delivered into the Timber Depôts at a rate per cubic foot. The amount of timber felled was of first-class timber cubic feet 905-8-9, of second-class timber 3,414-5-6, of third-class timber 4,100-6-6. The returns do not show the amount of different kinds of wood. The expenditure was Rupees 3,724-14-11.

Bamboos 95,310 were felled for Rupees 1,270-13-6. I am unable to estimate the probable yield of these forests, as I have, owing to the shortness of the time during which I have had charge of this office, been unable to spend so much time as I would have liked in the jungles, and have been latterly rendered by fever unable to bear any exposure to the sun. From what I have heard from others and from what I have myself seen of the Javadi Hills, I believe that if the young trees be not cut, there will be a good increase after five or six years. The yield of the Denkenekotta Forests will for some time be only limited by the expenditure of money. There is a great quantity of ripe timber of the valuable kinds, which is not at present accessible through want of communications. The present yield can be easily kept up for some years without any increase of expenditure. In the Javadi the jungles need rest, as the timber has been cut away most recklessly. The northern portion of the Culroyen Hills is worked by contract, and is the only place which at present contains much ripe timber.

Of Sandalwood there was felled Maunds 1,204 12½ lbs. at a cost of Rupees 651-11-2. In the South Arcot Range there were felled of first-class timber cubic feet 374-8-11, of second-class timber cubic feet 1,294-5-1, of third-class timber cubic feet 699-7-11 at a cost of Rupees 716-10-3. I am unable to separate the items of felling and carting as the work was done by contract. I have not been able to visit these forests; but believe that their yield cannot be much increased until the young timber has grown up.

4. All the forests of the Salem District are worked by License and Voucher. The Culroyen Hills have been visited by me. They were purchased at the end of the year 1869, and have not yet been worked. The valuable timber have been entirely cut away by the contractor of the headman. Only very young saplings remain. They will supply a vast quantity of bamboos for many years, and a good deal of second and third-class timber. A large amount of Capila Podi will be produced by them. The forest of the Kollimallays is at present of little value. It produces sandalwood much inferior to that of the Denkenekotta Forests and second-class timbers. The amount felled under License and Voucher was 222 bandy-loads of first-class timber, 210 of second-class, 280 of third-class, of firewood and charcoal and bamboos 21,558 bandy-loads, and head-loads of junglewood, bamboos, etc., 77,394.

5. In the South Arcot Range the timber felled under License and Voucher amounted to 695 bandy-loads of third-class timber, and 2,755 bandy loads of firewood, bamboos, and 829 head-loads, etc., of timber, and 4,863 head-loads of firewood, bamboos, etc.

6. The only new operation contemplated is the trial of the feasibility of floating timber on navigable rafts down the Cauvery to the Railway at Erode. Experienced floaters will be absolutely necessary to guide the rafts on their passage over rocky beds in the river. The demarcation of the reserves will be resumed when I am able to proceed to the spot, and at the commencement direct it myself. It was discontinued by me in January, as it seemed to me that the establishment was not giving its attention the special objects for which it was sanctioned.

7. *Financial Results.*—The expenditure was, for Establishment, Rupees 13,055-9-5 for con-

servancy and working Rupees 16,762-8-7, total Rupees 29,818-2-0. Receipts were inclusive of timber supplied to Public Departments estimated to be worth Rupees 574-0-7 and Rupees 64,133-14-4, giving a surplus in favour of Government of Rupees 34,889-2-11. It is to be observed that owing to Mr. Cadell's being absent on sick leave during the last three months of the official year and to no successor being appointed, the charge for establishment is less by Rupees 1,500 than it would have been had the Deputy Conservator's pay been drawn during those three months.

I have the honour to be, &c.,

(Signed) H. T. KNOX,

Asst. Collector in charge of Salem and South Arcot Forests.

RECEIPTS.	Rs.	A.	P.	Rs.	A.	P.
I. Sale of timber and Sandalwood brought to Depôt by Government agency.	14,550	4	8			
II. Value of timber supplied to Department Public Works, Remount Depôt.	574	0	7			
III. Sale of timber, firewood, bamboos, and charcoal removed from the forests by purchasers including seignorage.	32,629	15	0			
IV. Sale of confiscated timber, deducting 50 per cent. of the sale proceeds paid to the informants of clandestine felling—*vide* G. O., No. 921, dated 4th May 1865.	693	11	2			
V. Sale of fruits and other minor forest produce ...	16,076	13	4			
Miscellaneous Receipts	182	8	2			
				64,707	4	11
A.— *Conservancy and Working.*						
I. Timber expenses for felling, clearing, and saving, and transport of timber by land and water to depôts.	5,785	10	10			
II. Purchase of elephants, cattle, Tools and Plant ...	739	13	6			
III. Feed and keep of elephants and cattle	446	12	9			
IV. Purchase of forest (and seignorage paid for timber felled in leased forests.)	5,600	0	0			
V. Charges connected with the collection of revenue on fruits, etc.	209	2	10			
VI. Plantations	1,429	0	9			
VIII. Forest Survey, Topographical and Valuation, etc. ...	351	14	0			
IX. Experiments to test the value of timber of different kinds, etc.	25	4	0			
X. Communications, buildings, and minor works ...	701	8	7			
XI. Reserved tract for Railway fuel	923	5	4			
Total of Conservancy and Working ...	.....			16,212	8	7
B.—*Establishment.*						
I.—Salaries—						
(1) Pay of Deputy Conservator	6,259	6	10			
(2) Do. of the Establishment (Office)	1,402	13	0			
Executive.						
(3) Forest Conservancy Establishment	2,589	10	5			
(4) Timber Depôt and Working Establishment ...	2,260	15	0			
(5) Deputations and Special Allowances	.....					
II.—Travelling Allowances—						
(1) Deputy Conservator	.....					
(2) Executive Officers	.....					
(3) Subordinate Establishment	651	11	0			
III.—Contingencies—						
Sundries	264	8	0			
Total of Establishment ...	.....			13,429	0	3
Total of Expenditure ...	.....			29,641	8	10
Balance in favour of Government ...	.....			35,065	12	1

* N.B.—The Depôt rate is fixed at 12 Annas per cubic foot all round, but varies according

CAMP AT SALEM,
9th May 1870.

Forests for the official year 1869-70.

	Rs. A. P.	Rs. A. P.
Balance of timber in Depôt on 31st March 1869	7,710 14 11	
Add timber felled during 1869-70	12,223 4 5	
		19,934 3 4
Total ...	.....	19,934 3 4
Deduct timber sold in 1869-70	14,788 1 6	
Do. supplied to Public Departments	574 0 7	
Do. difference in quantity and rates in timber sold, etc. ...	* 567 9 6	
		15,929 11 7
Value of timber on hand on 31st March 1870...	.....	4,004 7 9
Value of timber on hand on 31st March 1869...	.....	7,710 14 11
Deficit in Stock ...	.....	3,706 7 2
Balance in favour of Government brought from last page ...	.....	35,065 12 1
Financial results in favour of Forests for the year ending 31st March 1870.	.....	31,359 4 11

to the class of timber felled and sold, the felling rates being proportionately higher or lower.

(Signed) H. T. KNOX,
Assistant Collector in charge of Salem, etc., Forests.

RECEIPTS.	Rs.	A.	P.	Rs.	A.	P.
I. Sale of timber and Sandalwood brought to Depôt by Government Agency.	1,303	8	8			
Value of Timber supplied to Department Public Works Remount Depôt.	.....					
II. Sale of timber, firewood, bamboos, and charcoal removed from the forests by purchasers, including seignorage.	2,469	3	8			
III. Sale of confiscated timber, deducting 50 per cent, of the sale proceeds paid to the informants of clandestine felling. *Vide* G. O., No. 921, dated 4th May 1865.	183	8	7			
IV. Sale of fruits and other minor forest produce ...	490	14	0			
Miscellaneous Receipts...	68	10	0			
				4,515	12	11
A. *Conservancy and Working.*						
I. Timber expenses for felling, clearing, and saving, and transport of timber by land and water to Depôts.	716	10	3			
II. Purchase of elephants, cattles, tools and plants ...	.....					
III. Feed and keep of elephants and cattle	.....					
IV. Rent of leased forests and seignorage paid for timber felled in leased forests.	.....					
V. Charges connected with the collection of revenue on fruits.	.....					
VI. Plantations	.....					
VII. Forest works, namely, cutting, protection of forest trees against fire.	.....					
X. Communications, buildings, and minor works ...	49	0	6			
XI. Reserved tract for railway fuel	184	6	0			
Total of Conservancy and working ...	.....			950	0	9
B. *Establishment.*						
I. Salaries—						
(1) Pay of the Deputy Conservator	.....					
(2) Pay of the Executive Officers	360	0	0			
(3) Pay of the Establishment (Office)	114	0	0			
Executive.						
(4) Forest Conservancy Establishment	593	12	0			
(5) Timber Depot and working establishment ...	.. ..					
(6) Deputations and Special allowances	.....					
II. Travelling Allowances—						
(1) Deputy Conservator	.....					
(2) Executive Officers	120	0	0			
(3) Subordinate Establishment	.....					
III. Contingencies—						
Sundries	29	10	4			
Total of Establishment ...	.....			1,217	6	4
Total of Expenditure ...	.....			2,167	7	1
Balance in favour of Government ...	.....			2,348	5	10

* N.B.—The Depôt rate is fixed at 12 Annas per cubic foot all round, but varies according to the class of timber

Dy. Cons.' Office Camp at Salem,

9th May 1870.

Forests for the official year 1869-70.

	Rs. A. P.	Rs. A. P.
Balance of Timber in Depôt on 31st March 1869	93 11 2	
Add Timber felled during 1869-70	1,682 14 9	
		1,776 9 11
Total ...	.....	1,776 9 11
Deduct Timber sold in 1869-70	1,303 8 8	
Do. difference in quantity and rates in timber, etc., sold...	* 445 6 0	1,748 14 8
Balance of Timber on hand ...	.....	27 11 3
Value of Timber on hand on 31st March 1870	.....	27 11 3
Value of Timber on hand on 31st March 1869	.....	93 11 2
Deficit in Stock ...	.....	65 15 11
Balance in favour of Government brought from last page ...	.....	2,348 5 10
Financial results in favour of Forests for the year ending 31st March 1870.	.....	2,282 5 11

felled and sold, the felling rates being proportionately higher or lower.

(Signed) H. T. KNOX,
Assistant Collector in charge of Salem, etc., Forests.

D.

Abstract of the Statement of Timber, etc., confiscated and sold in Salem District during the year 1869-70.

Description.	Number of bandy loads.	Number of head loads.	Amount realized.	Amount credited.	Amount distributed as rewards.
			RS. A. P.	RS. A. P.	RS. A. P.
1st Class Acha, etc.	17½	26	172 2 6	103 4 6	68 14 0
2nd do. Namai, Parambai, etc.	15	1	46 0 0	35 8 0	10 8 0
3rd do. Jungle-wood	12	88	92 2 3	68 10 1	23 8 2
Split Bamboos	5	33	22 6 7	17 8 10	4 13 9
Charcoal	1	1	4 14 0	2 15 6	1 14 6
Bamboos	15¾	201	58 2 5	38 5 11	19 12 6
Firewood...	21	...	19 15 7	16 11 7	3 4 0
358,000 lbs. of Railway fuel ...	...	...	595 13 6	409 12 9	*186 0 9
1 Mango Tree	...	...	0 14 0	0 14 0	... ...
Total ...	87¼	350	1,012 6 10	693 11 2	318 11 8

* Rupees 228-12-0 was wrongly credited in Treasury-receipt under head of seignorage instead of confiscations. H. T. K.

DEPUTY CONSERVATOR'S OFFICE,
CAMP AT SALEM, *3rd May* 1870.

(Signed) H. T. KNOX,
Assistant Collector in charge of Salem, etc., Forests.

D.

Abstract of the Statement of Timber, etc., confiscated and sold in South Arcot District during the official year 1869-70.

Description.	Number of bandy loads.	Number of head loads.	Amount realized.	Amount credited.	Amount distributed as rewards.
			RS. A. P.	RS. A. P.	RS. A. P.
1st Class Acha, Vengay, etc. ...	4¼	2⅓	19 15 3	16 9 0	3 6 3
2nd do. Namaikaleyacha, etc. .	10¾	3½	44 14 0	35 4 6	9 9 6
3rd do. Jungle-wood, etc. ...	12	...	43 12 0	29 7 0	14 5 0
Firewood...	106½	...	101 5 0	65 8 11	35 12 1
Avarum bark	9¼	6	46 8 0	26 13 0	19 11 0
Bamboos	5	6	14 10 0	9 4 6	5 5 6
Charcoal...	...	6	0 13 3	0 9 8	0 3 7
Total ...	147¾	24	271 13 6	183 8 7	88 4 11

DEPUTY CONSERVATOR'S OFFICE,
CAMP AT SALEM, *3rd May* 1870.

(Signed) H. T. KNOX,
Assistant Collector in charge of Salem, etc., Forests.

APPENDICES H. AND K.

OFFICE OF THE DEPUTY CONSERVATOR OF FORESTS,
IN CHARGE OF MADURA AND TINNEVELLY,
HEAD-QUARTERS, MADURA,
10*th April* 1870.

From

LIEUTENANT C. J. WALKER,
Deputy Conservator of Madura and Tinnevelly Forests,

To

MAJOR R. H. BEDDOME,
Officiating Conservator of Forests.

SIR,—I have the honour to submit the Administration Report of the Forests under my charge for the official year 1869-70.

I assumed charge of the Division on the 13th May from Overseer Appavoo, who had been placed in temporary charge on the death of Lieutenant Fullerton. Sickness induced me to avail myself of three months' privilege leave in September, October, and November, which has prevented my inspecting all the Forests so carefully as I could have wished. I have, however, visited all the talooks in which we are working, with the exception of Meylur (in Madura) and Nanganary (in Tinnevelly), and made myself conversant with the situation of the Tannah stations, mode of working the Forests, &c. A full report has been submitted on the state in which I found matters on taking over charge and the remedial measures proposed for adoption in order to promote efficiency of supervision, and thereby ensure increased conservancy and revenue to the State, and prevention of abuses. Pending a revision such as was proposed, little can be done save to restrict the felling, particularly in the Madura District, within the narrowest limits consistent with the requirements of the people, which has been done by stopping the issue of licenses, (except for the unreserved classes of timber,) and introduction of departmental working wherever practicable, whilst every means have been adopted to allow of the people obtaining, free and without molestation, the timber, &c., required for agricultural purposes, as well as further quantities required on payment of seignorage with the least possible delay and inconvenience.

The revenue of the Division amounts to Rupees 24,905 (Rupees 4,417 Madura, and Rs. 20,488 Tinnevelly),and expenditure to Rupees 18,099 (Rupees 9,005 Madura, and Rupees 9,094Tinnevelly), Timber in store is valued at Rupees 3,659 (Rupees 3,306 Madura, and Rupees 363 Tinnevelly), being an excess of Rupees 1,771 over the stock at the close of 1868-69. The balance in favour of Government is thus Rupees 8,577 for the two Districts, which is on the whole satisfactory, considering the property of the Madura Forests, and paucity and want of organization of our establishments. The formation of timber-yards, purchase of tools and plant, and other extra-ordinary expenditure swell the debit side, whilst the credit is reduced by the stoppage of felling on license and extensive granting of timber free to ryots and villagers. The salary of the Deputy Conservator for six months is debited to Tinnevelly, and for four months to Madura.

Introductory remarks, mentioning the name of Officer in charge, &c.

1. *Madura District.*—The Forests have been under the immediate charge of third-class Overseer A. Appavoo Pillay, throughout the year. He has, until lately, shown much zeal and aptitude for the work, for which he is particularly well qualified, having had the benefit of a superior education, and been employed in the Department since 1863. No fault that I am aware of has ever been attributed to this Overseer, and his not having been promoted and continually superceded by young and incompetent men appears to me a subject for much regret, inducing,

as it must, a daily increasing feeling of disappointment and dissatisfaction, which is not likely to tend to a careful and conscientious performance of his duties, and must end in his resignation or utterly neglecting his work.

Measures taken for extending, improving or protecting the Forests, &c.

2. A Forest Map on an enlarged scale has been commenced, an extract from which accompanied my recent report on the Retiembady and Ayagudy Forests. The want of a proper Head-Quarter's Office and establishments to conduct the routine work in my absence impedes the progress of this important work, as I cannot devote much time to it. Attention has been paid to the clearing of creepers from trees, and to the prevention of fire in the Cumbum Forests; no tracts in this District have as yet been demarcated, and selected as reserves, which renders any orders as to fire, trespass, &c., of little value. There are a few petty boundary disputes which await settlement in communication with the Divisional Officers. The main Shola at Kodikanel has been divided into blocks, only one of which is open at a time for felling and removal of trees marked by the Department, and, as fallen trees and those past maturity are alone marked, this plan must effectually preserve the sholah. During the year twenty-five trees containing 110 bandy-loads have been thus removed on license.

Quantity of timber felled and stored in Depôts, &c.

3. 2,210-11-0 cubic feet of timber were felled and stored in Depôts at Cumbum and Periacolum. The rates both for felling and carriage are very high, although I have succeeded in reducing them considerably during the year. I propose building a few carts and purchasing a few pairs of bullocks for our own use, which cannot fail to have a favourable effect in reducing the rates of carriage, and I hope to be able still further to reduce those for felling and dragging out of the forests.

Elephants and other cattles and carts in the forests, &c.

4. There are no Departmental elephants, cattle, or carts, and all work is now executed on contract, as mentioned in last paragraph.

Timber, fire-wood, bamboos, and charcoal, &c., removed by wood-cutters, &c., and timber, &c., felled on free passes.

5. These statements have been supplied to the Conservator.

Number and amount of confiscated logs, &c.

6. Statement C. exhibits the quantity of timber, &c., confiscated and sold and amount realized, which last is Rupees 131-4-4 against Rupees 144-12-0 in 1868-69. I think the establishments have been fairly vigilant, considering how small they are. I have little doubt that much small timber, fire-wood, &c., is removed without pass, as the number of peons is quite inadequate to watch such an extent of forest.

Timber of all descriptions sold to Merchants from Government Depots, &c.

7. 851-1-11 cubic feet of timber have been sold from Depôts realizing Rupees 784-13-7. I anticipate a large demand for timber this year when the Depôt system is better known, and understood, but the supply must be limited by the yield of the forests, and unless we bring timber from the Travancore territory above Cumbum and Gudalore, (on payment of a stump fee,) merchants must still look to private forests for their main supply.

Timber supplied to Public Departments, &c.

8. No timber was supplied to Public Departments; I have addressed the Superintending Engineer on the subject, as I found that his Department were purchasing from private individuals at greatly enhanced rates; but there would appear to be a prejudice, doubtless fostered by the lower grades from interested motives, against getting timber direct from Government, which could not fail however to be the best plan in the interests of both Departments. I would suggest that Government should issue some general instructions on the subject, to which it will be observed that I referred in my last year's report on the Salem and South Arcot Forests.

Out-standing advances enumerated, &c.

9. Out-standings only amount to Rupees 41-0-4, which calls for no remark. The sum is made up of petty items which could not be adjusted within the year.

Plantations.

10. Two or rather three plantations have been commenced, viz., one at Vannatyparay, in the Cumbum valley, for Teak and indigenous trees, and two (one Eucalyptus for building timber, and one Acacia for fire-wood) on the Pulney Hills, as authorized in Government Order, No. 3,102, dated 3rd December 1869. In the former, which I shall call No. 1, a nursery has been formed and enclosed; 9,500 square yards of jungle cleared for planting, 1,050 pits dug, and 1,050 young trees put out during the year. I have not visited the spot recently, but the Overseer reports that the plants are doing very well, and have attained an average height of 1½ to 2 feet; 3,000 plants remain in the nurseries ready for transplanting at the commencement of the rainy season (in June). It is to be regretted that the late date at which seed was received (June 1869) prevented the seedlings being ready to put out till 15th November 1869, which has necessitated a comparatively heavy expenditure for watering, which will, however, not recur as I intend irrigating by means of a channel or pecota. Some Teak seed has just been received for this year's sowing, and I intend putting down some Vengay and other seeds as an experiment. The total cost of this plantation up to date is Rupees 341-9-7. On the Pulney hills two nurseries have been formed, one for Eucalyptus and one for Acacias; a large quantity of seed was sown in November by the Acting Collector when in charge and germinated fairly, but I regret to say that almost all the seedlings have since perished. This is attributed by residents to unusually frosty nights and dry sunshiny days, without any rain, in January and February, but there was doubtless also neglect on the part of the Gardener and Forest Peon in charge. More seed has been put down, and I hope still to have a sufficient number of young trees to put out in August and September. 4,500 pits have been dug in the site of the Eucalyptus plantation at a cost of Rupees 90, the ground selected being the basin forming the native settlement, which it is proposed to remove elsewhere. We have contributed Rupees 60 towards compensation to those who had houses and gardens on the spot. For this we have acquired some excellent land for the nursery and the command of water; a sum of Rupees 50 remains to be paid on account of other land and upwards of one hundred young trees from two to six years old. These arrangements have all been made by the advice and in concert with the Acting Collector. The total expenditure on the Pulney Hills plantations up to 31st March is Rupees 178-2-4.

Forest Products.

11. A considerable income might be made from the sale of forest products, such as Myrobalans, &c., those who now collect them being still employed to do so, and amply remunerated. I have already expressed my views on this subject on several occasions, and am still of opinion that Government are losing a legitimate revenue of two or three lakhs of rupees in this Presidency from this source, whilst much damage is done to the forests by indiscriminate collection, and the supply is becoming scarce and only obtainable at high prices.

Collection is now only allowed in reserved forests. I can see no reason why it should not be extended to all which are Government property, care being taken to employ the classes to collect them who now do so for the merchants, and to pay them adequate wages. I have addressed the Collector with regard to the revenue from Tamarind tree in the Forests and Jungles under the Department, which is now erroneously carried to credit of Land Revenue, and hope to exhibit a considerable and increasing revenue from this source in future years.

Trespasses or damages committed in Forests, &c.

12. An abstract of Forest offences detected is exhibited in Statement D., compiled from the quarterly returns submitted in accordance with Circular No. 16, dated 25th September 1867. Our establishment is so small that many cases must pass undetected, though I trust to reduce those to a minimum by the stoppage of the license system, and the assistance of the Talook and Village Officers and Police, to whom orders have been issued on the subject. No question as to the legality of sentences has been raised since the High Court's decision, No. 789, dated 29th April 1869, on a case referred by the Acting Joint Magistrate, although I cannot consider their finding at all conclusive.

13. The Establishment has on the whole enjoyed good health. The Overseer and myself suffered slightly from fever. The services of one Maistry were dispensed with owing to his bad health, and one Peon died from fever.

Health of the Forest Establishment.

14. No new or rare plants have been discovered. Specimens of all the timber trees are being prepared, and seed collected for use at Nellambur and elsewhere.

Any valuable new rare plants discovered, &c.

15. Operations generally call for little further remark; much progress cannot be reported owing to the paucity of establishments and pending re-organization of the Department. Timber-yards have been opened at Periacolum and Cumbum, the site of the former, including a building adopted for the Overseer's Office (temporarily), having been purchased for Rupees 325. The Forests of the Retiembady Mootah and Ayagudy have been fully explored and reported on by the Overseer and myself, and will be brought under Departmental management from this month *(on behalf of the Zemindar.)*

Summary of operations.

The Acting Collector has recommended to the Board the placing of all forests belonging to estates under the Court of Wards under Departmental conservancy for the benefit of the estate, and a similar arrangement can, I think, be entered into with regard to all the private forests in the district. I have endeavoured to systematize the working generally, and particularly the checking and recovery of licenses, which had never been attended to. Free pass books have been supplied to all Divisional and Talook Officers, and similar books on a simpler form are ready for distribution to village Natamgars, so that Ryots may be put to no inconvenience with regard to the wood, &c., required for the purposes of agriculture. The greatest care has been taken in no way to interfere with, or encroach on, the prescriptive rights of the people, or in any way to subject them to unnecessary annoyance; and I think we may lay claim to some success in this respect, as I have heard of no complaints. I have delayed visiting the Kuranda-Mullays and Nuttum hills in the Dindigul and Meylur Talooks until I receive official information with regard to the route of the railway extension. On doing so I propose at once selecting and marking off extensive Railway reserves, and, if practicable, suitable plantations for fire-wood will be formed. I shall of course consult the Collector, and act in accordance with his wishes on all these matters. I have received his most cordial support and assistance, as well as that of all the Divisional and Talook Officers in all matters connected with conservancy.

16. The Financial results, as exhibited in the usual form, show a balance against the Forests of Rupees 3,169-5-0. I have no doubt of being able to establish an equilibrium in the course of a year or two, although felling operations must be limited.

Financial results.

RECEIPTS.

	Rs.	A.	P.	Rs.	A.	P.
I. Sale of timber brought to Depôts by Government Agency	784	13	7			
II. Sale of timber, fire-wood, bamboos, and charcoal removed from the forest by purchasers including seignorage	3,476	9	3			
VI. Sale of fruits and other minor Forest produce	1	0	0			
Miscellaneous receipts	155	4	4			
				4,417	11	2

EXPENDITURE.

I. Timber expenses for felling, clearing, sawing, and transport of timber by land or water to Depôts	1,578	2	7
II. Purchase of elephants, cattle, tools and plant ...	454	2	4
VI. Plantations	451	15	4

	Rs.	A.	P.	Rs.	A.	P.
VII. Forest work, viz., cutting creepers, protection of forest trees against fire	17	13	4			
VII. Forest survey, &c.	3	0	0			
IX. Experiments to test the value of timber, &c. ...	24	0	0			
X. Communication, building, &c.	419	6	0			
Total of conservancy and working ...	2,948	7	7			
B. Establishments.						
I.—Salaries—						
(1) Pay of Deputy Conservator of Forests ...	2,800	0	0			
(2) Do. Office Establishments...	554	13	6			
(3) Forest Conservancy Establishments	2,246	12	7			
II. Travelling allowance—						
(1) Deputy Conservator of Forests	82	7	0			
(2) Subordinate Establishment	180	0	0			
III. Office Contingencies	193	0	8			
Total of Establishment	6,057	1	9			
Total of Expenditure ...				9,005	9	4
Balance against the Forest ...				4,587	14	2
Balance of timber in Depôt on 31st March 1869.	3,433	11	11			
Add timber felled during 1869-70	2,203	6	9			
Total ...				5,637	2	8
Deduct timber sold in 1869-70				784	13	7
Balance of timber on hand* ...				4,852	5	1
* *Particulars of timber on hand and valuation.*						
3,107-10-4 cubic feet of timber in Cumbum Depôt valued at	3,071	13	6			
207-4-9 do. of timber in Periaculum Depôt valued at	234	13	8			
Stock of timber found deficient in the accounts kept by Overseer Turnbull ordered to be included. *Vide* G. O., No. 502, dated 11th April 1870, para. 3	1,545	9	11			
Total ...				4,852	5	1
Against Forests for the year ...				3,169	5	0

TINNEVELLY DISTRICT.

Introductory remarks mentioning the name of Officer in charge, &c.

Second-class Overseer Mr. Newman has been in charge of the Forests, assisted by five Maistries or Sub-Overseers. His youth and inexperience render him unfitted for such an extended charge, and his duties have not been performed with that care and attention to detail, which I should have liked. In the month of July I recommended his transfer to another Range, where he would be more under the eye of the officer, and have facilities for acquiring a knowledge of routine work, system of accounts, &c., of which he is perfectly ignorant; my recommendation however was not complied with. I have since done my best to teach him, although from the

extent of the range, and the number of other duties which devolve both on him and myself, I have not had many opportunities of doing so. I think that he has latterly been doing better, and his returns, &c., are submitted more regularly, but his transfer to a smaller charge, where he would have the benefit of more supervision and advice, appears as desirable as ever.

Measures taken for extending, improving or protecting the forests, &c.

2. The forests selected by Mr. Puckle for reserve have been carefully explored with a view to their eventual demarcation; the limits assigned appear judicious, and leave an ample margin of unreserved or open forest and jungle for the use of the people. The tracts assigned by Mr. Puckle for grazing of cattle, &c., have also been inspected, and correct lists made out for guidance; the limits in some instances will have to be increased, and fresh tracts assigned for felling of wood, for agricultural implements, &c., those now opened being closed and conserved. There are numerous boundary disputes awaiting adjustment, in order to effect which I have proposed the appointment of a Commission or Committee to commence operations in July next. This, I trust, will be approved of, as it is much required in the interests of Government and all concerned.

Quantity of timber felled and stored in Depots, &c.

3. 235-4-3 cubic feet of timber only have been felled by the Department during the year (during last month); the inexperience of the Overseer and establishments generally having led me to defer the introduction of Departmental working, I have, however, now stopped the issue of licenses in two Talooks, and hope to introduce and extend the "close system" during the year. The existing arrangements for bringing the timber out of the forest are very rude, and there is great waste; almost all timber being cut up with axes in the forest into pieces which can be carried by one or two men. I think a circular saw worked by steam or water-power would pay in the extensive forests above Paupanassum, and elsewhere; we shall endeavour to introduce the system of dragging out the logs by means of buffaloes, as is done in other forests.

Elephants and other cattle and carts in the forests, &c.

4. The rates demanded for carriage are very high, and we shall probably have to keep our own carts and cattle in most Talooks.

Timber, fire-wood, bamboos, and charcoal, &c., removed by wood-cutters, &c., and timber, &c., supplied free to the ryots.

5. These statements have been supplied to the Conservator.

Number and amount of confiscated logs, &c.

6. The number of confiscated logs and amount realized is exhibited in statement C. These sales are now closely checked, and monthly statement submitted for adjustment of rewards, &c.; clandestine felling is not frequent.

Timber of all descriptions sold to merchants from Government Depôt, &c.

7. None.

Timber supplied to Public Departments, &c.

8. None. *Vide* remarks on this subject in the Madura Report.

Out-standing advances enumerated, &c.

9. No advances remain unadjusted.

Plantations.

10. No plantations have yet been formed, and I await a decision as to the future position and duties of the Department before proposing any. Planting is not, I consider, required in the hill tracts, which are extensively wooded, and I have already, in my report on the Cinchonas, (dated 28th August 1869, No. 97,) deprecated their extensive planting as proposed by Mr. Stuart. I observe however that, that gentleman's suggestions have been favourably received by the Secretary of State, and am of course prepared to carry them out if thought best.

There is no doubt that extensive planting *in the plains* should be at once commenced, and if the local conservancy is to be amalgamated with imperial, as I hope it may, I shall at once select sites and commence operations in communication with the District Collector and Divisional Officers; attention has been paid to the Local Fund plantations near Courtalum, and a quantity of

bamboo seeds put down on the banks of the channels there, which is doing well. I regret to say that the villagers do not however appreciate or approve of this introduction, or increase of the bamboo (a quantity of which was sown in Mr. Puckle's time), as they complain that it harbours snakes ! I should think that this could hardly have much weight if compared with its manifold uses and advantages.

Forest Products.

11. The remarks on this subject in the Madura report apply here also and in a still greater degree, the revenue sacrificed by Government is *very* large ; here also the rents of tamarind trees growing in forests or jungle lands under our supervision have been carried to credit of land revenue, with regard to which I have addressed the Collector. In accordance with the orders of Government I have commenced the collection of Cardamums *in the reserved tracts* by the means of departmental servants and the hill men. Only Rupees 212-6-0 have been realized during the year, but I have reason to believe that great irregularities took place, and that the cardamums were removed by the agents of the contractor for the neighbouring forest of Singumputty with the connivance of some of our establishments, in connection with which one Maistry is now under suspension pending full inquiry. Eight persons were prosecuted for stealing cardamums, found guilty, and punished by the Magistracy.

Trespasses or damages committed in forests, &c.

12. An abstract of the Quarterly Returns of Forest Offences is given in Statement D. The number of cases detected and punished reflects credit on the Overseer and establishments, the former is very active in moving about his range.

Health of the Forest Establishments.

13. The establishments have, as a rule, been healthy, but the Overseer himself has suffered a good deal from fever, and I had a sharp attack when in the District in August.

Any valuable new or rare plants discovered, &c.

14. A log of the Shenkurunthay (Holigarna) has been sent to Mr. Deschamps to ascertain its value as a furniture wood. A complete set of specimens of the following woods, required by the Secretary of State, has been sent to the Central Office :—Nirkong *Hopea (Parviflora)*, Nang *(Mesua-speciosa)*, Nirnang *(Mesua-coromandeliana)*, Shenkurunthay *(Holigarna* or *glutea)*, Vellay Thoveray (*dyospyros sp. no.*), also specimen blocks of other trees of which the seed and flower have still to be sent. Specimens of all the trees are being prepared.

Summary Operations.

15. As in Madura much progress cannot be reported, owing to the necessity of a revision of the establishments, the want of a more experienced Overseer, and my absence on leave for three months in the working season. License Registers and Weekly Report from the Maistries have been introduced with much benefit, and the rules of the Department more fully made known and enforced. The Acting Collector approves of my proposal to take over the management of the Forests of estates under the Court of Wards ; and if the appointment of the Committee already referred to is sanctioned, I hope at the same time as we settle the boundaries to be able to arrange for bringing all the Zemindary Forests under our management ; any surplus in receipts, over working and conservancy expenses to go to the Zemindars themselves, which is the fairest plan, as it cannot be the wish or intention of Government to make money by such management of private forests, but merely to protect their own interests and secure the benefits of conservancy for the country in general.

Financial Results.

16. The financial results shown in the usual form exhibit a surplus of Rupees 11,747-3-8 ; with careful supervision and inspection by adequately paid subordinates, the substitution of departmental working for the license and voucher system, and development of the revenue to be derived from cardamums and other forest products, I have little doubt that the revenue in a few years would reach to *a lakh of*

rupees and the available surplus to at least half as much, the greater portion of which should be spent in planting for many years.

Receipts.

		Rs.	A.	P.	Rs.	A.	P.
II.	Sale of timber, fire-wood, bamboos, and charcoal removed from the forest by purchasers including seignorage	19,983	8	0			
VI.	Sale of fruits and other minor forest produce ...	212	6	0			
	Miscellaneous receipts	293	1	7			
					20,488	15	7

Expenditure.

I.	Timber expenses for felling, clearing, sawing, and transport of timber by land or water to Depôt	235	5	9			
II	Purchase of elephants, cattle, tools, and plant ...	84	1	10			
V.	Charges connected with the collection of Revenue on fruits, &c.	87	7	0			
IX.	Experiments to test the value of timber of different kinds	108	7	0			
X.	Communication, building, &c.	15	0	0			
	Total of conservancy and working ...	530	5	7			
	Establishment.						
I.	Salaries :—						
	1. Pay of Deputy Conservator of Forest ...	4,312	14	5			
	2. „ Office Establishments	60	0	0			
	3. Forest Conservancy Establishment	3,753	0	11			
II.	Travelling allowance :—						
	2. Executive Officers	360	0	0			
III.	Office Contingencies	191	6	0			
	Total of Establishment...	8,677	5	4			
	Total of Expenditure...				9,207	10	11
	Balance in favour of Government...				11,281	4	8
	Balance of timber in Depôt on 31st March 1869						
	Add timber felled during 1869-70	353	0	7			
	Deduct timber sold in 1869-70						
	Balance of timber on hand ...				353	0	7
	Particulars of timber on hand on 31st March 1870.						
	Value of timber on hand on 31st March 1869 ...						
	Deduct balance of timber in Depôt 31st on March 1870	353	0	7			
	Additional stock...	353	0	7			
	Results for the year ...				11,634	5	3

C.

Abstract of the Statement of Timber, &c., confiscated and sold in the Madura and Tinnevelly Districts during the official year 1869-70.

Description.	Number of bandy loads.	Number of head loads.	Amount realized.	Amount credited.	Amount distributed as rewards.
			MADURA.		
			RS. A. P.	RS. A. P.	RS. A. P.
Vengay	2¼	...	33 0 0	26 10 0	6 6 0
Teak and Black-wood... ...	4¼	...	43 2 0	39 11 0	3 7 0
Jungle-wood	3¼	...	12 12 0	7 9 0	5 3 0
Bamboos	...	2	1 0 0	1 0 0	... ...
Fire-wood	20	...	59 11 10	56 6 4	3 5 6
Total...	29¾	2	149 9 10	131 4 4	18 5 6
			TINNEVELLY.		
Timber and Jungle-wood ...	34	...	307 1 7	208 1 3	99 0 4
Bamboos	2	10	2 1 4	2 1 4	... ...
Fire-wood	12	50	24 0 0	22 10 0	1 6 0
Charcoal	8	16	33 8 0	30 5 0	3 3 0
Cardamums (3 tolas)	...	2	40 0 0	20 0 0	20 0 0
Total...	56	78	406 10 11	283 1 7	123 9 4
Grand Total...	85¾	80	556 4 9	414 5 11	141 14 10

MADURA,
10th April 1870.

(Signed) C. J. WALKER, Lieutenant,
Deputy Conservator of Forests,
Madura and Tinnevelly.

D.

Abstract of Statement of Forest Offences detected during the year 1869-70 *and prosecuted before the Magistracy or disposed of Departmentally, with reesult.*

District.	Nature of Offence.	Number of cases.	Number of persons charged.	By whom tried.	Result.
Madura ...	Theft, under Section 379 of I. P. C. ...	6	23	Sub-Magistrate of Periacolum, Chinnamanoor, Pulney and Pulney Hills.	5 convicted and 1 dismissed.
	Mischief, under Section 426 of I. P. C. ...	3	3	Do. do.	The whole 3 were convicted.
Tinnevelly.	Theft, under Section 379 of I. P. C., and under Sections 10 and 11 of Act XI. of 1866	26	109	Sub-Magistrate of Umbasamoodrum, Sunkaraninarcoil, and Village Magistrate	24 convicted and 2 released.
	Mischief, under Section 426 of I. P. C. ...	1	2	Sub-Magistrate of Umbasamoodrum.	Convicted.
	Breach of Forest Rules	1	47	Forest Overseer ..	Confiscated.

MADURA,
10th April 1870.

(Signed) C. J. WALKER, Lieutenant,
Deputy Conservator of Forests,
Madura and Tinnevelly.

APPENDICES L. AND M.

CAMP, MADRAS, 1*st April* 1870.

From

CAPTAIN H. M. GOSLING,
Deputy Conservator of Forests,
Anamalay and Paulghaut Ranges.

To

MAJOR R. H. BEDDOME,
Officiating Conservator of Forests, Madras.

SIR,—I have the honour to submit the Annual Report on the operations carried on in the forests comprised in the range under my charge during the past official year.

Introduction.

Anamalay Forest.

2. The year under review is marked by the renewal of felling, which since 1865 has been suspended in this forest.

Renewal of Felling.

Eighty Rose-wood Trees, yielding 407 logs, containing 8,325 cubic feet: and thirty Teak-wood Trees, producing 198 logs, the cubical contents of which amounted to 3,242 cubic feet of timber, have been felled. The cost of cutting and trimming the above scantlings averages three annas five pies per cubic foot for Rose-wood; and annas two, pies seven for Teak. The felling has been confined solely to the Government forest *proper;* the contiguous forest, leased from the Numboody of Colongode having been untouched. The Rose-wood trees averaged twelve feet in girth, while two measured eighteen and twenty-one feet round, respectively, and were without a branch to the fork, which was fifty feet from the ground. Their great size rendered it desirable to saw the butts into planks, the diameter of which exceeded 4½ feet. Four logs of Teak free of heartshake were procured for the Railway Company, measuring 40 × 20" × 16" from two trees, each twelve feet in circumference. The Rose-wood cut this season is intended to meet the requirements of the Madras Gun Carriage Manufactory.

Specification of Timber felled.

Cost of felling.

Locality of felling.

Girth of Trees felled.

Lofty and clear stems.

Remarkable diameter of planks.

Teak beams of unusual dimensions

Destination of Rose-wood felled.

3. During the monsoon the removal of timber above Ghaut was entirely performed by the Government Cart establishment, which conveyed 662 logs of Teak and Rose-wood, containing 16,228 cubic feet of timber, from the Depôts in the interior of the forest above the Hills, down the new Ghaut I constructed in 1868, to the Railway Stations and Towns of Coimbatore and Paulghaut, and to the Floating Station at Mungarah. At contractors' rates the value of this work amounts to Rupees 3,284-8-9, against Rupees 3,497-1-9, the cost of maintenance; but this includes all charges and entire repair of carts. At the end of the season a few contractors performed work as follows:—between the *foot* of Ghaut and above stations 451 logs, containing 6,611 cubic feet, for Rupees 1,401-15-6.

Carting during the monsoon.

Value of the new Ghaut made in 1868.

Valuation of work performed by the Government Cart Establishment.

Contractor's work and valuation.

4. The Order of Government, No. 167, dated 7th February 1870, referred to in the margin, arrived too late to be taken advantage of last season. I have tested the concession in one case only to an old contractor, well-known in the earlier days of Anamalay forest operations, by name Mahomed Sahib of Paulghaut, to whom Rupees 500 was paid in the presence of the Head Assistant Magistrate of Paulghaut, and who has commenced work. I am confident that the renewal of advances will remove all the difficulties hitherto experienced in procuring labour, and greatly

Relaxation of Prohibitory Order of Government regarding advances permitted with reference to the Anamalays experimentally.

Accumulation of Timber in Depôts.

Extra demands from Bombay for Teak.

facilitate the rapid removal of the accumulation of timber in the Forest Depôts amounting to 2,697 logs of Teak, and 278 of Rose-wood. The order has come most opportunely, considering the enormous demands made this year for timber by the Bombay Marine.

Valuation of Elephant Labour.

5. The four elephants (including one received back from Kurnool in September) have *as usual* well earned the cost of their feed and keep. Eleven hundred and eighty-four logs of Teak and Rose-wood, containing 22,028 cubic feet of timber, have been dragged from the sites of the trees felled in the forest to the road-side and Depôts. Estimating this work at the cost of engaging hired elephants, on ten rupees per diem, the value of work performed amounts to Rupees 3,560, against Rupees 2,573 for their maintenance. In this sum is included the salary, Rupees 300 per annum, of the Fouzdar in charge of the health of the animals. The calves, offsprings of the above female elephants, three in number, are growing vigorously and in thriving health, owing to the care bestowed on them by the Fouzdar, whose skill, attention, and zeal is most praiseworthy.

Elephant Calves.

Services of the Fouzdar.

Decrease in cost of transit by rail of timber exported from the Anamalay.

6. The Appendix A. shows the decrease in expense in the substitution of the route *viâ* Polachy to the Coimbatore Railway Station, and the conveyance thence of our timber by rail to Beypore over the old and abandoned line *viâ* Mungarah, through Colongode, to the coast down the Ponany River. This route, owing to extensive concessions by the Railway Company, to secure a timber traffic on this portion of their line, not only enables us to be independent of season and flood in the river, but from the superior state of the road *viâ* Polachy greatly promotes easy and rapid carting, and induces contractors to come forward more willingly. The obstacle of extra expense, which the use of the rail instead of water naturally presents, is removed by the equitable concessions made by the Railway Company, and the other favourable conditions above enumerated would more than compensate, had it existed, for even actual extra expense.

Obstacle on the grounds of extra expense removed.

7. Those unaccustomed to the Forests on the Anamalays would be unable to realize the dense gloom of the avenues of trees and bamboos that shrouded the roads above Ghaut, before the clearings made last season. Where the sunshine could not penetrate it will be naturally understood that the heavy rains of the monsoons saturated the soil, rendering traffic impossible. Advantage therefore was taken this year of the presence of the Hill tribes to clear away the over-hanging boughs of trees and bamboos to a width of 100 feet on both the roads above Ghaut and the Ghaut itself. In addition to the improvement effected by the admission of sun and light, wild beasts, which formerly lurked in close proximity to the imminent hazard of passers-by and cattle, were effectually scared. This work was performed at a comparatively small cost.

Clearance of over-hanging boughs and bamboos on the Forest Roads and the Ghaut.

Danger from wild beasts removed.

8. There has been no mortality among the establishment either permanent or temporary, during the past year, which I attribute to the excellent care taken of the subordinates and the prophylactic measures adopted by Hospital Assistant Amurthavasagayum Pillay, No. 581, whose zealous discharge of duty I request may be directly brought to the favourable notice of the head of his Department. This has been his second year of service on the Anamalays. The Head Overseer, Mr. G. A. Storey, resigned again from ill-health in January, though re-appointed only in the previous September. Mr. G. F. Meppen, who did good service in the construction of the Ghaut in 1868 has been appointed to succeed him. I desire here to record the cheerful and zealous aid I have received during the tenure of this appointment, which from ill-health I am obliged reluctantly to leave, from the Assistant Overseers mentioned in the margin, who have uniformly, under every disadvantage of climate, endeavoured, I believe, to work their best.

Health of Establishment.

Able professional conduct of Hospital Assistant in Medical Charge.

Changes among subordinates.

Satisfactory testimony to behaviour of subordinates.

1. Mootoosawmy Pillay.
2. Sied Goolam Sheffie.
3. Mooroogasem Pillay.

No damage from fire.

9. The usual precautions having been adopted, it is needless to remark that no timber was destroyed during the occurrence of the annual fires. Three logs of Teak were, it is supposed, carried out to sea and lost during the freshes in the Ponany river last September. Their value will be recovered from the contractors.

Prosecution of out-standing advances.

10. The prosecution of the out-standings of former years has been intrusted to Mr. Overseer Lloyd and Assistant Overseer Mooroogasem Pillay. The amount is still Rupees 4,070-0-10, the majority of which, with the assistance of the local authorities, should be recovered.

Terrific Hurricane.

11. A severe hurricane, travelling from N. E. to S. W., traversed the forest on the 15th November 1869, at midnight, uprooting many Teak, Vengay, Vella, Naga, Rose-wood, and other trees, principally of young growth. Ripe trees standing on spare soil suffered most, being blown over with large clumps of bamboos, like straw stalks. The sholahs also suffered on the other side

Effects.

of the Anagoondy Pass. The Establishment at Toonacudavoo, including myself, had narrow escapes from the falling timber, which in the darkness of the night and from the noise of the elements it was difficult to distinguish or

Fallen Timber dressed.

avoid. The numerous axe-men would have absconded had I not on the abatement of the storm at day-light occupied their attention by setting them to work to trim up the fallen timber round and in the station.

Ghaut uninjured.

The injury to the Ghaut was slight, comparatively, to the damage which the same storm occasioned to the Coonoor Ghaut. The roads and Ghaut were quickly relieved of the fallen trees and bamboos and traffic resumed.

Plantations and Nurseries.

12. There is a small Teak plantation opened out in 1860, on the right-hand side of the road leading to Toonacudavoo, which I propose to form as a nucleus for more extended operations. For this purpose I have applied to you for an Establishment consisting of one Assistant Overseer and two gardeners, whose salaries can be disbursed from the Working Charges Funds sanc-

Suggestions.

tioned for the ensuing year. This establishment might, during the next two months, be sent to learn planting under Mr. Ferguson at Nelāmbŭr. Fifty acres should be cleared of bamboos and brush-wood, second-class timber being left standing as a protection and shade, and for its intrinsic value, and Teak and Rose-wood seeds planted and nurseries commenced.

Suggestions.

Yearly additional tracts should be opened out when ultimately the existing bamboo and worthless jungle would be succeeded by a valuable forest of Teak and Rose-wood, which the promising soil, ample rain-fall, and correct elevation naturally secure. The prospective value of this forest would increase rapidly under these operations, which though involving present outlay with no returns until after the lapse of several years, yet eventually the value of these plantations, from the favourable conditions above stated, would far exceed those at Nelāmbŭr. When sufficiently advanced these plantations might be placed in charge of a Forester instructed in vegetable physiology and arboriculture. There is no doubt that, as pointed out by the Marquis of Tweeddale in his Minute of the 8th December 1846, on the Nelāmbŭr Conolly plantations :—"Teak requires the same soil as Oak, viz., a strong "pure clay; and from the peculiar localities in which the Teak "Forests of Malabar and Canara are found, dotted as they are "over the immense tracts of jungle and forests of other woods, there is sufficient evidence "of their partiality for particular soils and situations, and it may be found that there is an "imperative necessity for Teak being planted in the *quality* of soil it *naturally* prefers." These remarks exactly apply to the superb natural excellence of the Toonacudavoo Valley on the Anamalays, as a site for plantations of teak.

The Marquis of Tweeddale on Teak Plantations.

13. There is one Reserved Forest on the Anamalays, divided into Government Forest proper and that leased from the Numboody of Colongode. They lie in adjacent valleys, separated by a ridge running back from one of the peaks of the hills termed Pundara Mullay. The Government Forest was worked prior to 1848, by Native agency, subordinate to the District Collector, and before that by the Bombay Marine to whom it was let. Since 1848, the Government have under departmental supervision conducted the operations. The forest leased from the Numboody was exposed to Native contractors prior to 1850, since which date of its rescue from spoliation and reckless denudation, the Department has controlled the felling in its precints. I consider the stock of ripe timber (Teak) in both to be equal, from which a supply of 700 logs per annum for ten years may be obtained. The Rose-wood timber is much less in quantity, and probably would not yield more than 250 logs per annum for seven years. On these grounds I recommended in letter No. 50, dated 1st March 1870, the immediate commencement of plantations as affording a respite to the valleys which have been hitherto worked. I also advocated, in the same letter, the construction of a road across the ridge separating the Toonacudavoo and Anagoondy valleys in order to open out the latter, which is a virgin tract of forest, full of gigantic Teak and Rose-wood trees. In paragraph 8, page 42 of the Report for 1866-67, will be found a representation of the urgent necessity for a survey of this tract, showing the exact boundary line between Cochin and British territory. In the same paragraph it was pointed out that the sources of the hitherto well-stocked portion of the Anamalay Forest were almost exhausted. The alarming prospect which a failure in supplying the Gun Carriage and Marine Departments requirements would occasion, impels me once more to press the necessity for the immediate commencement of this survey. I subjoin a detailed statement of the demand made by these Public Departments for ensuing year, irrespective of former indents :—

Reserved Forests on the Anamalays.

By whom worked.

Stock of Timber left.

Opening out of the Anagoondy Valley, containing Virgin Forest.

Extra Indents.

Bombay Marine...	Item 1	Teak Logs...	No. 825
	„ 2	Do. Planks	„ 2,000
	„ 3	Do. Rafters	„ 2,000
	„ 4	Do. Crooks	„ 750
	„ 5	Do. Knees	„ 750
	„ 6	Do. Sotta (large)	„ 500
	„ 7	Do. do. (small)	„ 500
	„ 8	Rose-wood logs	„ 100
	„ 9	Do. Planks	„ 50
	„ 10	Poon spars (from 25 feet to 90 feet	„ 24
	„ 11	Jungle-wood	„ 200
		Total...	„ 7,699

In addition to the above the Madras and Bombay G. C. M. require each 10,000, cubic feet of Rose-wood. I have suggested to Mr. Douglas, my successor, to commence felling next season in the leased Forest, and to continue doing so until the Rupees 30,000 stump fee advanced by Government to the Numboody of Colongode is adjusted. The operations in the Government Forest should be confined to getting out the felled timber in Depôts. The leased forest should be worked from Takedy, as being nearer for export. It is necessary that ten pairs of powerful bullocks and four more elephants be purchased to supplement the existing establishments. An extension of the present road from Takedy into the interior of the leased forest of about 3½ miles in length is requisite. As this will go over an old line, the cost will be small.

Gun Carriage Indents of two Presidencies.

Contemplated operations.

Leased Forest to be worked until stump fee of 30,000 Rupees is cleared.

Fresh cattle and elephants required.

Financial results.

Present stock of Timber in Depôt disposed of.

15. The financial results of the past year are most satisfactory. It is gratifying to know that the majority of the timber accumulated in Depôt in 1866 has been removed and sold, and that the remainder is also disposed of, and will probably be removed this year. The account current does not show the real profit of the year, as only the sums actually paid or credited by Departments appear; for instance, the unadjusted account of timber sold to the Bombay Marine last year is included in this, while the value of 125 logs of Teak and Rose-wood supplied during current year, not having been paid for within this official year, will appear in next. The actual receipts were as follows :—

Actual and estimated Revenue.

Amount adjusted from last official year.

Items of actual Revenue paid for in 1869-70.

Item.		Rs.	A.	P.
1.	From the Superintendent of Marine, Bombay, for timber supplied in 1868-69 ...	41,213	7	1
2.	Do. do. in 1869-70	35,785	6	6
3.	Do. do. Bombay Gun Carriage Manufactory do.	3,503	12	0
4.	Madras Gun Carriage Manufactory ...	568	8	0
5.	Do. Department Public Works	8,406	0	10
6.	Do. Railway Company	813	15	11
7.	Do. Jails	231	5	7
8.	Miscellaneous	640	10	4
9.	Seignorage in Pollachy	1,347	13	3
10.	Do. Oodoomalcotah	889	15	3
11.	By auction sale at Ponany	108	15	0
12.	Coimbatore Central Jail	35	13	5
	(*Paid*) Total Rupees...	93,529	11	2
	Deduct sum erroneously credited to Annamalay Forest last year and adjusted in Bolumputty accounts of this year	* 4,614	15	0
	(*Paid*) Rupees...	88,194	12	2

* *Vide* para. 17, Bolumputty Forest, Financial Results.

Unadjusted items of Timber supplied during 1869-70.

The following items were supplied during current official year, but the money not having been received prior to 31st March 1870 has not been exhibited under the head of actual receipts above :—

	Rs.	A.	P.
To Bombay Marine	6,623	12	0
Madras Railway Company, from the Poonachy Teak Forest (Sleepers).	1,387	3	3
Madras Gun Carriage Manufactory	3,222	0	0
(*Unpaid*) Total Rupees...	11,232	15	3

Financial Results :—

Receipts. (*as above particularized.*)

	Rs.	A.	P.
Sale of timber from the depôt	1,678	13	11
Do. of fire-wood and bamboos, &c.	2,237	12	6
Miscellaneous	135	15	0
	4,052	9	5
Value of timber supplied to Department Public Works	84,862	2	11
Total...	88,914	12	4

Expenditure.

A.—*Conservancy and Working.*

	Rs.	A.	P.
I. Timber, expenses for felling, cutting, &c.	5,490	0	2
II. Purchase of elephants and cattle, &c.	2,189	3	4

	Rs.	A.	P.	Rs.	A.	P.
III. Feed and keep of elephants, &c.	7,254	12	8			
IV. Forest work, viz., cutting creepers, &c.	1,182	15	0			
V. Communications, buildings, &c.	8,138	14	8			
Total of Conservancy and working charges...				24,255	13	10
B. Establishment.						
I. Salaries—						
Pay of Deputy Conservator of Forests	8,367	11	10			
Office establishment	600	0	0			
Forest Conservancy do.	4,923	4	3			
II. Travelling Allowance—						
Subordinate establishment	162	6	1			
III. Office contingencies	306	9	3			
				14,359	15	5
Total Expenditure ...				38,615	13	3
Balance in favour of Government				50,298	15	1
Balance of timber on 31st March 1869	1,91,824	10	6			
Do. do. on 31st March 1870	1,16,356	9	8			
Decrease in stock				75,468	0	10

16. Prior to my appointment to the range, operations were confined to felling Teak and Rose-wood in the narrow valley of Toonacudavoo on the Anamalays. A nominal conservancy had been commenced in the low country forests of the Coimbatore Talook. Restrictive measures were in force in the Pollachy and Oodoomalcotah Talooks by which neither the people nor Government benefited. The Forests on the Sholaykurray Hills at Waliar, and in that which lapsed to Government on the death of the owner (Chenat Nair) opposite Paulghaut, had been ransacked by successive contractors, and lastly by the Railway Company, until every full grown tree had been removed. But little of the profit accrued to Government, while private individuals have made large fortunes.

Effects of introduction of Forest Conservancy in the low-land Forest of the range.

The Paulghaut Forest denuded.

In 1867 I obtained the sanction of Government, through Dr. Cleghorn, to increase the protective establishment of the low-land Forest. An Overseer was specially appointed at Bolumputty, near Coimbatore, and at Kotoor, near Pollachy, the low-land forests were thrown open to the people under the License and Voucher system and a substantial revenue from this source established. Due regard has also been shown to the inherent rights of the agriculturists, and free licenses for procuring timber, &c., for purely *bonâ fide* domestic purposes, largely issued. At the same time the rights of the Hill tribes, viz., Kaders, Mulsers, Irulers, Pulliars, and Muduwars, have been scrupulously respected. No greater proof of their contentment can be given than the gratifying fact of "no complaint" *of any kind* having been made of Departmental working to the Collector by these tribes during his visit to the Hills in December last. There is no doubt that considerable revenue could be justly made by the Department taking over the purchase of the hill products collected by the tribes. But before this is done, the Government must be prepared to indemnify the Chetties who now trade with the forest population and adjust their debts. This might be done through the Collector or one of his Assistants, for about a sum of Rupees 2,500. This sum could be gradually worked out in the supply of hill produce by the tribes. An arrangement of this nature has been often proposed to my predecessors and myself by Viapoory, Chief of the Hill Tribes, and a famous elephant and bison hunter, and would be most gladly welcomed by the Hill population, many hundreds in number and most loyally attached to the Government.

Increase of Establishment.

Inherent rights freely recognized.

Personal testimony of Collector to contentment of Hill tribes with departmental working.

Purchase of Debts of Hill tribes.

When Dr. Cleghorn, under the auspices of Lord Harris, instituted the Department in 1857, the situation of the people of India with reference to forest rights was such that scarcely any conservancy could be attempted without infringing in some way their interests. All rights were more or less in a state of uncertainty, and the case became confounded by applying to Indian forests the publicly recognized Forest Code of Europe. But if ever an opportunity for the insertion of the thin edge of improvement offered itself for the protection of Indian Forests, it occurred in 1857, when Railways and Irrigation and other vast projects commenced, affording an excellent plea for doing so. Dr. Cleghorn opportunely seized this moment for commencing a system which has justly earned him the title of "Founder of Forest Conservancy in India" from the late Governor-General, Lord Lawrence. Under this system the Department has yearly advanced and expanded and embraced the whole peninsula. It is difficult to reconcile all interests, but not uneasy to observe a moderate and discriminating middle course which shall recognize the communal rights of the people of the country, enrich those rights by a careful conservancy, and secure to Government a small yet just and sure source of revenue. I have endeavoured to follow this course in the administration of this range during the past 3½ years. The able and exhaustive reasons assigned by Dr. Cleghorn in the first ten pages of the preface to his work, entitled the "Gardens and Forests of Southern India," are well worthy of perusal now, and will have just weight in refuting arguments adverse to the existence of the department, as a separate institution, which have lately been promulgated

Forest rights in 1857.

Forest Code of Europe applied to India.

Dr. Cleghorn, "Founder of Forest Conservancy in India."

Remarks in the preface of Dr. Cleghorn's work on Forests in Southern India.

17. This forest has successively been under Messrs. Overseers Lloyd and Meppen. The charges amount to Rupees 6,245-14-9; and the receipts from seignorage collected under the License and Voucher system, for bamboos fuel, etc., and by sale of timber from Depôt to Public Departments, are Rupees 13,402-11-7, showing a balance *in favour* of the forest of Rupees 7,156-12-10. The tract of forest land on the eastern slope of the Bolumputty Hills, claimed by Andu Sait of Coimbatore, has been surveyed together with the two coffee plantations on and above the Ghaut by the Revenue Survey Department, and contains 16 and 900 acres respectively; as he is entitled only by his Puttah to 300 acres, he will have to select a piece of that amount in one block, and hand over the remainder to Government. I have received considerable assistance from Mr. Sullivan in bringing this matter, so long unsettled, to a satisfactory termination. It now remains only to resume certain portions of land unauthorizedly cleared by Hill tribes on the slopes of these hills adjacent to Andu Sait's claim, and to re-plant them with Teak and Rose-wood. The soil, climate, and rain-fall peculiarly render these slopes desirable spots for plantations. They might easily and cheaply be re-gained from the Hill-men. It is a matter of surprise to me how in the face of the Standing Order of the Revenue Board, No. 151, paragraph 4, the Hill-men could have been permitted to acquire and clear these slopes, particularly since it is well known that the Noyel and the principal source of the Bowany rivers take their source thence. The denudation of these hills is strongly to be condemned, as likely to affect the rain-fall and consequently the irrigation of those lands lying under the channels fed by these streams.

Bolemputty Forest.

Hill side unauthorizedly cleared by Hill-men.

18. Situated on the borders of the Malabar District and Coimbatore Talook, this forest is amply watered by both monsoons. Deforestment, reckless and wanton, was unscrupulously practised prior to its reception by the department. Branches of Rose-wood and Teak lying in all directions testified to the careless waste of Native Contractors. It affords me much gratification to be able to attribute the realization of most of this timber, and its storing in Depôt for sale at Wallayar, close to the Railway Station, to Mr. Overseer J. E. Lloyd.

Sholaykurray Forest.

From these discarded branches of Teak and Rose-wood 909 logs of the former, containing 1,830 cubic feet, and 231 logs of the latter, containing 472 cubic feet of timber, have been trimmed up for sale.

Work performed.

Revenue.

In addition to the above fifty-two logs of Vengay, containing 780 cubic feet and twenty-four pairs of spokes and felloes, were felled. The under-mentioned Departments and merchants were supplied with timber during the past official year :—

		Rs.	A.	P.
Actual receipts for the year 1869-70.	To Department Public Works, No 2 Division, thirteen logs of Acha, Teak and Vengay, containing 162 cubic feet	191	13	11
	and, 250 cubic yards of fuel	312	8	0
	To a merchant of Paulghaut, ten logs of Vengay, containing ninety-nine cubic feet	87	8	0
	By seignorage collected in Coimbatore Talook	3,209	9	9
	To Messrs. Deschamps and Co., thirty-one Rose-wood logs containing 389 cubic feet	535	13	0
	To Salem Jail, four Vengay logs, containing 66 cubic feet, four Teak logs, containing 65 cubic feet; and 100 felloes of Teak valued at	51	15	0
	(for which only received part-payment.)			
	To the Madras Railway Company for 315 cubic yards of fuel	315	9	0
	(Paid) Total...	4,704	12	8

The following sums represent the value of timber supplied last official year to the under-mentioned departments, and credited this year :—

		Rs.	A.	P.
Revenue of 1868-69 adjusted in 1869-70.	To Bombay Marine, 37 Rose-wood logs, containing 693 cubic feet ...	1,810	12	0
	1 Rose-wood log containing 11-9-8 cubic feet ...	35	6	8
	24 Jungle-wood logs containing 659 cubic feet ...	824	2	5
	2 Do. logs containing 36-2-¾ cubic feet ...	45	3	10
	To Bombay Gun Carriage Manufactory, 21 Teak-wood logs, containing 435 cubic feet	1,307	8	0
	Eight cubic yards of fuel sold to public	8	0	0
	To Madras Gun Carriage Manufactory, 71 rose-wood logs containing 1,530 cubic feet, re-transferred from Anamalay Forest accounts, *vide* para. 15, Anamalay Financial Results	4,614	15	0
	(Paid) Total...	8,645	15	11

N. B.—The under-mentioned sums are due for timber supplied during 1869-70, *but not adjusted.*

Sums due.	By Salem Central Jail (balance)	190	1	11
	By Bombay Marine...	495	12	0
	(Unpaid) Total...	685	13	11

Financial Results :—

Receipts. (*as above particularized.*)	Rs.	A.	P.	Rs.	A.	P.
I. Sale of timber brought to depôts	946	13	10			
II. Do. do. fire-wood, &c., including seignorage ...	3,261	8	9			
III. Supply of timber to Department Public Works ...	9,142	5	10			
				13,350	12	5
Expenditure.						
I. Timber expenses for felling, cutting, &c.	1,355	11	0			
II. Purchase of cattle	435	0	0			
III. Feed and keep of cattle	496	5	6			
IV. Plantations	413	9	11			
V. Forest work, cutting of creepers, &c.	44	7	0			
VI. Communications, &c.	340	0	7			
Total of Conservancy and work...	3,085	2	0			

B. Establishment.

I. Salaries.	Rs.	A.	P.	Rs.	A.	P.
1. Forest Conservancy establishment	3,076	0	3			
2. Office Contingencies	84	12	6			
Total Expenditure ...				6,245	14	9
Balance in favour of Government				7,104	13	8
Balance of timber on hand on 31st March 1869 ...	13,671	14	6			
Do. of do. on 31st do. 1870 ...	5,712	10	8			
Decrease in stock ...				7,959	3	10

Work performed by Government Cart Establishment.

19. The Government Cart Establishment in this forest consists of three country carts, two sling carts, four pairs of bullocks, and four drivers. By this agency 231 Rose-wood logs containing 472 cubic feet, 277 Teak logs containing 554 cubic feet, three Teak-wood planks containing 36 cubic feet, and 250 cubic yards of fuel were removed from the Sholaykurray forest to the Walliar Depôt.

Work performed by Contractors.

By Contractors, 35 Vengay logs containing 525 cubic feet; 632 Teak-wood logs containing 1,276 cubic feet, and 24 pairs of spokes and felloes were removed between the above places.

Dragging.

Elephants were hired to drag 46 Vengay logs, and coolies dragged 909 Teak-wood, and 231 Rose-wood logs of small dimensions, including three Teak-wood planks, and 24 pairs of spokes and felloes from the forest above Ghaut on the Sholaykurray hills to the foot.

Proposed Plantations on the Sholaykurray Hills.

20. 18¾ acres of ground have been marked in the valley on the Sholaykurray hills for opening a Teak plantation to re-place the deforestment alluded to in paragraph 18. Another piece in the same valley, about half a mile square, containing 3,000 Teak and Rose-wood saplings of natural growth will be fenced in, and conservancy measures adopted this year.

Walliar Fuel Reserve.

This plantation, consisting of 970 acres, principally natural grown forest, and situated at the base of the Sholaykurray hills, contiguous to the Railway, is progressing rapidly and promises to become a valuable source of supply of fuel to the Railway for which it was chiefly formed.

Planting operations.

6,000 Pits, one foot square, were dug, in which were planted the following :—

Operations.

2,000	Seedlings	of Illupay.
1,000	do.	of Mango.
2,000	do.	of Pooathy.
1,000	do.	of Vapum.
1,000	do.	of Tamarind.

Results.

The first four kinds flourished until the hot weather dried up the stream from which they were irrigated, when three-fourths died. I have ordered a well to be dug to supply water during the hot season. Four acres of ground were sown broad-cast with Babool, but the experiment failed. I have ordered that it should be sown in pits along the aloe hedge fencing in future. The Tamarind planted out is thriving. 1,238 Teak saplings in the reserve were cleared of branches and creepers.

Conclusion.

I have the honour to be, etc.,

(Signed) H. M. GOSLING, Captain,

Deputy Conservator of Forests.

N. B.—The Chenât Nair forest has not been worked during the year under review.

H. M. G.

APPENDIX A.

Statement of cost of conveying Teak and other Timber by present and proposed Routes.

	Present Route *viâ* Colongode and Mungarah to Ponany.	Amount. RS.	A.	P.		Proposed Route *viâ* Anamalay and Poolachy to Railway Station at Coimbatore.	Amount. RS.	A.	P.
Item. 1	Cart hire 611 logs containing 14,664 cubic feet from foot of Ghaut to Mungarah, at Rupees 5-8-0 per log.	3,360	8	0	Item. 1	Cart hire for conveying 611 logs containing 14,664 cubic feet from foot of Ghaut to Railway Station at Coimbatore, at Rupees 4 per log	2,444	0	0
„ 2	Floating same, at 6½ per log...	250	0	0					
„ 3	Cost of hauling the same into bed of river at Mungarah for floating, at 1 Anna per log	38	0	0	„ 2	Cost of conveyance by Rail to Beypoor of 611 logs containing 14,664 cubic feet of timber or 293¼ tons, at Rupees 6-9-0 per ton of 50 cubic feet	1,924	7	0
„ 4	Do. do. out of river at Ponany	38	0	0					
„ 5	Do. do. at Ponany for inspecting prior to delivery	38	0	0	„ 3	Unloading charges at Beypoor, at Rupees 4-6-0 per ton of 50 cubic feet	82	8	0
„ 6	Salary of Writer and two Peons at Ponany per mensem Rupees 32...	364	0	0	„ 4	Hauling at Beypoor from Crane to Depôt and turning logs for inspection per log at 4 Annas	152	12	0
„ 7	Salary of Floater and one Peon at Mungarah per mensem Rupees 31	372	0	0	„ 5	Salary of a Writer and 1 Peon at Beypoor	192	0	0
„ 8	Miscellaneous charges for Anganny Peons watching rattans for floating, &c., &c.	150	0	0					
„ 9	Annual cost of repairing road to Mungarah ...	700	0	0					
„ 10	Rent of ground for Depôts at Mungarah and Ponany per mensem Rupees 4	48	0	0					
	Total ...	5,358	8	0		Total ...	4,795	11	0
	Deduct ...	4,795	11	0					
	In favour of new route ...	562	13	0					

N. B.—Loss of logs by being carried out to Sea in floating should be taken into account in this Comparative Statement.

MADRAS,
26th April 1870.

(Signed) H. M. GOSLING, Captain,
Deputy Conservator of Forests.

APPENDIX B.

Statement showing the collections of Seignorage on Bamboos and Firewood in the Talooks mentioned below, from April 1869 to March 1870.

Poolachy and Anamalay Talooks.	Amount.	Oodoomalpettah Talook.	Amount.	Coimbatore Talook.	Amount.	Grand Total.
	RS. A. P.		RS. A. P.		RS. A. P.	RS. A. P.
Seignorage collected in April.....	53 14 0	Seignorage collected in April....	43 12 0	Seignorage collected in April.....	182 5 9	
Do. do. May.....	128 3 0	Do. do. May. ...	68 3 9	Do. do. May.....	603 3 0	
Do. do. June.....	94 8 0	Do. do. June. ...	64 13 3	Do. do. June.....	388 10 9	
Do. do. July.....	63 2 0	Do. do. July. ...	80 3 6	Do. do. July.....	213 7 0	
Do. do. August..	51 11 0	Do. do. August..	73 3 6	Do. do. August..	152 0 0	
Do. do. Sept	71 8 0	Do. do. Sept.. ..	75 2 0	Do. do. Sept.....	329 11 9	
Do. do. October.	159 10 0	Do. do. October.	104 10 0	Do. do. October.	303 6 9	
Do. do. Nov.....	41 1 6	Do. do. Nov.....	41 6 3	Do. do. Nov.....	184 4 3	
Do. do. Dec.	177 0 6	Do. do. Dec.....	77 15 6	Do. do. Dec.....	171 9 3	
Do. do. January.	238 4 9	Do. do. January.	114 4 6	Do. do. January.	330 14 0	
Do. do. February	74 15 0	Do, do. February	74 1 9	Do. do. February	43 15 3	
Do. do. March...	98 13 6	Do. do. March...	79 15 3	Do. do. March....	358 1 0	
Total Poolachy ...	1,252 11 3	Total Oodoomalpettah ...	897 11 3	Total Coimbatore...	3,261 8 9	5,411 15 3
					Deduct Commission paid to the Managers...	229 6 10
					Net Profit ...	5,182 8 5

MADRAS,
25th *April* 1870.

(Signed) H. M. GOSLING, Captain,
Deputy Conservator of Forests.

APPENDIX C.

Register of the Forest Offences tried before the several Magistrates in the Paulghaut Range during the official year 1869-70

Place where, and date when offences were committed.		Offences.	Number of persons charged.	By whom tried.	Result and Punishment, if convicted.	Remarks, if any, recorded by trying Officers as to conduct of Dept.	Informer.
Poolumpully Forest, Chenat Nair ...	30th December 1869.	Theft.	3	1st-class Magistrate of Paulghaut.	1st prisoner 50 Rs. fine and one day's imprisonment; 2nd and 3rd prisoners 15 days' imprisonment each.	Nil.	Aremen Pynie Malai and Peon Coongoo Nair.
Poolumpully Forest, Chenat Nair ...	28th January 1870.	Do. ...	1	Do. ...	Fined 100 Rupees and 7 days' imprisonment.	Do. ...	Forest Goomastah Sevaramayen and Moondoor Monigar Naraina Nair.
Yallwell Forest, Chenat Nair	March 1870. ...	Do. ...	1	Do. ...	Fined 20 Rupees and 20 days' imprisonment.	Do. ...	Donypallayum Chinnoo.
Wolliar Depôt ...	Do. ...	Do. ...	Forest Peon.	Assistant Collector of Coimbatore ...	Discharged for want of proof.	Do. ...	Watchmen.

MADRAS,
25th April 1870.

(Signed) H. M. GOSLING, Captain,
Deputy Conservator of Forests.

No. 11.

ANAMALAY RANGE.

Memorandum of the quantity of Timber unaccounted for on the 30th April 1870.

	RS.	A.	P.	RS.	A.	P.
Value of timber unaccounted for, brought from last year's account	1,91,824	10	6			
Add timber felled during 1869-70.	11,073	0	0			
				2,02,897	10	6
Deduct timber sold in 1869-70	1,678	13	11			
Do. supplied to Public Departments as per Vouchers attached	84,862	2	11			
				86,541	0	10
Balance...				1,16,356	9	8

PARTICULARS OF THE BALANCE.

Above and below Ghaut.

939	Teak planks containing 36,881 cubic feet, at 2¼ Rs. per cubic foot	82,982	4	0		
679	Teak logs containing 8,861 cubic feet, at 1 R. per cubic foot	8,861	0	0		
521	Teak heads and butts containing 4,422 cubic feet, at 12 Annas per cubic foot	3,316	8	0		
10	Vengay logs containing 205 cubic feet, at 10 Annas per cubic foot	128	2	0		
365	Rose-wood planks containing 7,251¼ cubic feet, at 1 Rupee per cubic foot	7,251	4	0		
161	Teak planks containing 2,748¼ cubic feet, at 1 Rupee per cubic foot	2,748	4	0		
22	Teak logs containing 421 cubic feet, at 2½ Rupees per cubic foot	1,052	8	0		
10	Jungle-wood containing 111 cubic feet, at 1 Rupee per cubic foot	111	0	0		
1	Jungle-wood containing 11½ cubic feet... ...	24	2	8		
	Add value of timber supplied to the Public Departments during the current year, but money not received	9,881	9	0		
					1,16,356	9 8

(Signed) H. M. GOSLING, Captain,
Deputy Conservator of Forests.

MADRAS,
27th April 1870.

No. 11.

BOLEMPUTTY RANGE.

Memorandum of the quantity of Timber unaccounted for on the 30th April 1870.

	RS.	A.	P.	RS.	A.	P.
Value of timber unaccounted for, brought from last year's account	13,671	14	6			
Add timber felled during 1869-70	2,130	0	0			
				15,801	14	6
Deduct timber sold in 1869-70	946	14	0			
Do. supplied to Public Departments as per Voucher attached	9,142	5	10			
				10,089	3	10
Balance...				5,712	10	8

PARTICULARS OF THE BALANCE.

		RS.	A.	P.	RS.	A.	P.
	Chenat Nair Forest.						
21	Rose-wood logs containing 492½ cubic feet, at 2½ Rupees per cubic foot	1,131	4	0			
83	Jungle-wood logs containing 704 cubic feet, at 5 Annas per cubic foot	220	0	0			
	Sholacurray Forest.						
22	Rose-wood logs containing 653½ cubic feet, at 2 Rupees per cubic foot	1,307	0	0			
231	Rose-wood heads and butts containing 472 cubic feet, at Annas 11-10$\frac{22}{50}$ per cubic foot	350	0	0			
15	Teak-wood log containing 59½ cubic feet, at 2 Rupees per cubic foot	119	0	0			
909	Teak pieces containing 1,830 cubic feet, at Annas 8-8$\frac{46}{61}$ per cubic foot	1,000	0	0			
47	Jungle-wood logs containing 648¾ cubic feet, at Rupees 1-3-3$\frac{46}{173}$ per cubic foot	780	0	0			
	Coimbatore						
34	Teak-wood pieces containing 264½ cubic feet, at 6 Annas per cubic foot	99	3	0			
2	Jungle-wood logs containing 28 cubic feet, at 6 Annas per cubic foot	10	8	0			
1	Rose-wood log containing 8½ cubic feet... ...	9	13	9			
	Add value of timber supplied to the Public Departments during the current year, but money not received...	685	13	11			
					5,712	10	8

(Signed) H. M. GOSLING, Captain,
Deputy Conservator of Forests.

MADRAS,
27th April 1870.

APPENDICES N. O. P. AND Q.

OOTACAMUND,
DEPUTY CONSERVATOR'S OFFICE,
30th April 1870.

No. 858.

From

LIEUTENANT-COLONEL H. R. MORGAN,
Deputy Conservator of Forests.

To

MAJOR R. H. BEDDOME,
Officiating Conservator of Forests,
Ootacamund.

SIR,—I have the honour to forward the Annual Report of the Forests under my charge for the official year 1869-70.

2. The total expenditure amounts to Rupees 71,332-4-8 and the returns to Rs. 1,02,648-1-1, showing a profit of Rs. 31,315-12-5 for the year, with wood in store valued at Rs. 1,71,406-9-9.

3. *Mudumallay Forest.*—The operations in this forest for the past year have been conducted by Overseer Iasawmy Naik, who has given satisfaction.

4. *Sawing Timber.*—A few Sawyers have been at work for a short time to reduce the large logs to a bandy load; there has been a difficulty in retaining them in the forest for any time.

5. *Dragging Timber.*—Elephants, three in number, have dragged from the forest to the Depôts on the roads 50,856½ cubic feet of Teak and Vengay, which, at contract rate of two annas per cubic foot, amounts to Rupees 6,357-1-0 against Rs. 2,344-2-10* for their feed and keep. In the month of January a report reached me that a male elephant had become must or mad, had nearly killed his keeper, and was at large to the great terror of the people. I immediately proceeded to Mudumallay and found the place completely deserted. The mad elephant came up to my hut on hearing the noise of my arrival, and proceeded to charge me, though I called to him by name. Finding he was within twenty yards of me, and still coming on, I fired a shot at his head to stun him; it had the desired effect, and he slowly retreated. Half an hour after this I took my horse and people to the tank for water, leaving a servant with a gun in the hut. On reaching the tank I was joined by two mahouts and two chetties who had heard the sound of my gun. Suddenly my servant appeared from the hut, dreadfully frightened, declaring that the elephant had tried to kill him, and was destroying the hut. I immediately proceeded to the hut, distant some two hundred yards, accompanied by the mahouts and chetties; we found the elephant breaking down a smaller hut. On hearing us, he advanced at the charge. I called to the mahouts to order him to kneel; this they did, but he refused to obey, backing instead of kneeling; the elephant then went round the back of the hut, came round to the side and once more, in the most determined manner, charged down upon me. At twenty yard's distance I fired high at his head, as I did not wish to kill him; the blow dit not stop him, and on his reaching within ten yards of me I again fired, this time lower; the blow fairly stunned him, and he turned and fled; had he made good his charge, somebody must have fallen a victim, as a more determined charge I never saw. We followed up the elephant for seven miles, but he never attempted even to turn, so we left him; but the next morning he was back again in a chettie's yard where he found agreeable quarter, as there was a stock of newly cut paddy in the yard. It was then resolved to catch him by artifice, accordingly opium balls mixed with

	Rs.	A.	P.
* Provisions ...	1,314	5	0
Pay of drivers ...	926	8	10
	2,240	13	10
Commissariat Elephants ...	103	5	0
Total...	2,344	2	10

sugar were laid in his path. We watched him as he tasted them and spate them out; finally having rejected the opium balls, he advanced into the centre of a paddy field and amused himself by eating the chettie's grain, and blowing dust upon his wounds. Seeing that he was quiet, I ordered up the two Karkana elephants with ropes to catch him. Several of the chetties declined the dangerous experiment, and I could only count on the assistance of the two elephants, and one or two of my own people. The elephant allowed us to approach within fifty yards, then walked quietly away, leaving us to follow him. We gave chase, and as he was passing a tree a chetty fired at him, thus frightening him away. We followed for some five miles, but though close to him on several occasions, he would not stop, so we were compelled reluctantly to give up the chase, for that night. In the meantime I had written to Hoonsoor for elephants, and I resolved to leave him alone until they came. On their arrival, some ten days after, the elephant was chased and caught immediately. He had five wounds, none of any consequence—except one in the jaw, *that* given by a chetty from the tree; the wounds have been washed with carbolic acid and water, and nearly all are healed. For fifteen days all work at the Karkana had been put a stop to; loaded carts had been upset; the office broken into by the elephant to get at some jaggery; and every person that he scented was immediately charged. His powers of smelling were extraordinary; hearing and sight were quite secondary; no man was safe at 200 yards distance. The approach of the elephant was so noiseless that it was with the utmost difficulty a man pursued could escape. I may mention that this elephant broke loose six years ago, and was at large in the forest for a month when the Rajah of Mysore's elephants arriving, he was at once caught by a ball consisting of bhang, opium, spirits and jaggery being placed in his path; this he ate, became stupified, and was easily tied. The cause of the elephant becoming must on this occasion was that the mahout did not work him properly; it was in vain I warned the mahout that his life would probably be the sacrifice if he neglected my orders. For five years my orders were attended to, and the elephant, a very valuable one, had always been fully worked.

		Rs.	A.	P.
Bennai to Mudumallay	500 cb. ft. at 2 as.	62	8	0
Moothenthodu to do.	14,771 cb. ft. at 3 as.	2,769	11	0
Do. to Tippacadu...	10,483¾ cb. ft. at 4 as.	2,620	15	6
Bennai to do.	561¼ cb. ft. at 3 as.	105	3	9
Mudumallay to do.	12,424½ cb. ft. at 1 as.	776	8	9
Moothenthodu to Bennai	8,730 cb. ft. at 2 as.	1,091	4	0
	474,70¾ cb. ft.	7 426	3	0

6. *Carting Timber.*—During the past year twenty-five pairs of bullocks and carts have been employed in carting timber from the far Depôts in the forests to Depôts at Tippacadu Karkana, &c., 47,470⅞ * cb. ft. have been carted which, at Contractors' rates, amounts to Rupees 7,426-3-0, * against their feed and keep of Rupees 6,886-5-0,† leaving a small surplus for wear and tear of carts and bullocks.

	Rs.	A.	P.
† Provisions	3,843	10	4
Pay of Drivers	3,042	10	8
Total...	6,886	5	0

7. There was a good deal of murrain amongst the bandy contractors' bullocks at Musnicoil, it was not of a very deadly character by keeping the contractor's bullocks away from the karkana. I was fortunate not to have a single case of murrain amongst the Government bullocks. Segregation is no doubt the most effectual means for the prevention of the spread of murrain, but to expect Natives to practise it without a Cattle Act is, I fear, beyond hoping for.

8. *Roads.*—The main line of forest, twenty miles in length, has been kept in thorough repair; a new branch road, four miles long, is now in use; and a further new line, two miles long, tapping the very farthest depôts has just been completed; our forest is now well intersected by roads.

9. *Teak Plantation.*—The twenty-acre teak plantation commenced in 1864 has made very fair progress. Some of the trees are now thirty feet in height and four inches in diameter, in fact, as far as growth is concerned, teak planting at Mudumallay is a decided success; the great drawback is a want of labour at the right time to keep down the terrible grass of the jungles. As felling is now stopped I trust to make my Coorumbers available for weeding this year. The new

plantation at Bonnie consists of but 4,000 plants; it was intended to have planted, 12,000, but mealy-bug attacked the tap-roots of the seedlings in the nursery and destroyed more than 20,000. Placing ashes round the tap-roots had the effect of keeping off the mealy-bugs to some extent. This year some 8,000 plants will be put out.

10. *Criminal Prosecutions.*—There have been no criminal prosecutions.

			RS.	A.	P.
From the Ooty Depôt Teak	1,510¾	cubic feet =	2,563	14	0
,, Mudumallay Depôt Teak	7,091¼	,, =	2,726	10	0
,, Do. do. Vengay	8,028¾	,, =	8,150	6	0
,, Seegur Depôt Teak...	1,922¼	,, =	1,835	1	0
			9,775	15	0
On Bamboos	354 14 0				
,, Firewood	1 9 0				
,, Do. by contract	36 6 0				
Sale of Tools and Plant... ...	19 8 0				
Miscellaneous	8 4 0				
			420	9	0
		Total Revenue =	10,196	8	0

11. *Sale of Timber.*—Timber sold to the Public amounts to Rupees 9,775-15-0 which, together with the amount of Rupees 420-9-0 realized by seignorage on bamboos, &c., has been carried to Forest Revenue.

12. *Supply of Timber to Department Public Works.*—The quantity of timber supplied from the Ootacamund Depôt to the Lawrence Asylum Works, &c., on the Neilgherries amounts to 18,453¼ cubic feet, and that supplied from the Mudumallay Karkana and Tippacadu for the Vythery Bridge, &c., amounts to 506¼ cubic feet, or making a total of 18,959$\frac{7}{12}$ cubic feet.=Rupees 37,781-15-4, which has been adjusted on receipts from time to time.

			RS.	A.	P.
From Ootacamund Depôt. Lawrence Asylum Works	12,964½	=	25,929	0	0
Wellington Workshop	2,799½	=	5,599	0	0
Laboratory Works	54½	=	109	0	0
Ooty Subsidiary Jail	670	=	1,340	0	0
Government Cinchona Plantation ...	295¾	=	591	8	0
Various bridges	671½	=	1,343	0	0
Miscellaneous works	223¼	=	446	8	0
Goodalore Ghaut Road work... ...	774¼	=	1,548	8	0
	18,453¼	=	36,906	8	0
From Karkana Depôt, Vythery Bridge ...	472⅛	=	826	9	4
From Tippacadu do. Bridge work ...	34	=	48	14	0
Total cubic feet supplied...	18,959$\frac{7}{12}$	=	37,781	15	4

13. *Stock of Timber on hand.*—The quantity of timber to be accounted for is 1,66,543¼ cubic feet lying at the various Depôts which at different rates amounts to Rupees 1,46,502-8-0 as hereunder particularized :—

	RS.	A.	P.	RS.	A.	P.
Value of timber on 1st April 1869	1,74,477	7	4			
Add timber felled in 1869-70	20,332	15	0			
				1,94,810	6	4
Deduct timber supplied to D. P. W. as per paragraph 12	37,781	15	4			
Do. do. sold to the Public as per paragraph 11 ..	9,775	15	0			
Do. do. destroyed by fire and white-ants ...	750	0	0			
				48,307	14	4
* Balance on 1st April 1870 ...				1,46,502	8	0

* *Particulars of the Balance.*	RS.	A.	P.	RS.	A.	P.
98,107 cubic feet in Forests, @	0	12	0 =	73,580	4	0
53,912 ,, in Tippacadu, @ ...	1	0	0 =	53,912	0	0
1,023 ,, in Musnigoody, @ ...	1	0	0 =	1,023	0	0
4,529¼ ,, in Seegur, @	1	0	0 =	4,529	4	0
8,972 ,, in Ootacamund, @ ...	1	8	0 =	13,458	0	0
				1,46,502	8	0

	RS.	A.	P.
Out of old advances...	848	15	7
,, New advances.	119	12	0
Total...	968	11	7

14. *Unadjusted Advances.*—The outstanding advances remaining to be adjusted amount to Rupees 968-11-7, inclusive of the sum of Rupees 523-15-7 recommended to be written off the accounts.

15. *Health of the Establishment.*—The health of the Forest Establishment has been slightly better this year.

16. *Financial Results* :—

Receipts.

Value of timber supplied to Public Works Department as per paragraph 12				37,781	15	4
Do. sold to the Public as per paragraph 11... ...				9,775	15	0
Do. realized by Seignorage, &c., as per paragraph 11				420	9	0
						47,978 7 4

Expenditure.

Pay of the Deputy Conservator of Forests				4,800	0	0	
Military pay of do. as Major in the Staff Corps				7,690	14	0	
Office Establishment ...	1,320	14	6				
Forest Conservancy ...	1,521	5	6				
Timber Depôt Establishment	732	0	0				
				3,574	4	0	
Travelling allowance of Deputy Conservator of Forests				1,080	0	0	
Do. of the Forest Conservancy Establishment				120	0	0	
				17,265	2	0	
Office Contingency				150	11	0	
						17,415 13 0	
Felling and squaring timber ...				2,009	7	1	
Sawing timber				24	0	0	
Carriage of do.				10,157	4	7	
Feed and keep of elephants ...				2,344	2	10	
Do. of bullocks				6,886	5	0	
Rent of forest				3,500	0	0	
Do. of Timber Depôt at Ooty ...				95	0	0	
Purchase of tools				80	0	0	
Teak Plantation				2,166	1	10	
Communication				2,105	12	5	
Building huts				195	0	0	
Miscellaneous charges				388	3	2	
General supervision				13	2	7	
						29,964 7 6	
							47,380 4 6
Balance in favour of Government...							598 2 10
Value of timber in various depôts on 31st March 1869.						1,74,477 7 4	
Do. do. on 31st March 1870...						1,46,503 8 0	
Deficiency...						27,973 15 4	

In summarizing the operations for the past year, I would observe that the financial result would have been far more satisfactory if the Department Public Works had taken their full indent; the wood, in value 13,000 Rupees, was delivered in Ootacamund for their use, but orders having arrived to stop all work, we could not hand over the above amount, which would have been our profit for the year.

17. SEEGUR AND SUTTIAMUNGALUM.—*Forests worked by the Overseer.*—These forests during the past year have been carefully worked and conserved by Overseer Appavoo Moodelly.

18. *Jungle Conservation.*—The quantity of sandal-wood felled and stored in depôt amounts to 6,497½ maunds, valued at Rupees 19,380-14-0.

19. *Principal Operations.*—The principal operations during the past year have been felling sandal-wood and forming experimental plantations. The usual conservation of the forests has been carefully carried out.

20. *Dragging Timber.*—But one pair of buffaloes is employed in dragging timber. 991 maunds of sandal-wood have been brought to depôt which, at the contract rates, amounts to Rupees 371-10-0, against their feed and keep of Rupees 272-11-9.

21. *Sandal-wood Plantation.*—The experiments in the Sandal-wood plantation have been carefully carried out; a large nursery at Tallamallay is kept up; 5,130 plants have been put out during the year at a cost of Rupees 839-13-7, including the weeding of the old plantation. The total number of plants here is 30,000. Those four years old have seeded, they are ten feet high and promise well; in fact the rearing of Sandal-wood plantations may now be considered an established fact; but to accomplish planting cheaply and remuneratively it will be necessary that we employ elephants for breaking up the ground deeply with English ploughs, subsoiling and weeding by means of the cultivator. I consider subsoiling indispensable to save the plants from drought and ensure a rapid growth for the first three years. I trust by next year to be in a position to furnish a reliable estimate for planting from 200 to 500 acres. Hitherto our planting has been a succession of experiments to enable us to arrive at the cheapest and most certain plan for the extension of this valuable tree on a large scale.

22. *Trespass committed.*—There is now no complaint of trespass; all applications for land are referred to me, and the land inspected by myself or the Overseer before it is given.

23. *Health of the Establishment.*—There has not been so much fever this year as usual.

24. *Unadjusted Advances.*—A small sum has been recommended to be written off to "Profit and Loss" as bad debt and irrecoverable, viz., Rupees 289-2-7.

		RS.	A.	P.	RS.	A.	P.
Seignorages on	Teak-wood	46	0	0			
Do.	Black-wood	70	0	0			
Do.	Vengay-wood	6	0	0			
Do.	Jungle-wood	638	0	0			
Do.	Firewood by Department.	298	15	0			
Do.	Bamboos	52	3	0			
Do.	Valum-bark	80	0	0			
Do.	Firewood, bamboos, charcoal and Valumbark rented	1,030	0	0			
					2,221	2	0
	Sandal-wood from the Depôt				18,000	0	0
	Teak-wood from the Depôts				1,243	7	6
	Total Revenue ...				21,464	9	6

25. *Sale of Timber.*—The amount of wood sold by license amounts to Rupees 2,221-2-0; Sandal-wood sold to merchants amounts to Rupees 18,000; and Teak-wood to Rupees 1,243-7-6, or making a total of Rupees 21,464-9-6 which has been carried to the credit of the forest.

26. *Supply of Timber to Public Works Department.*—None.

27. *Stock of Timber on hand.*—The quantity of timber unaccounted for is hereunder particularized which at different rates amounts to Rupees *17,141-6-9 :—

* Value of timber unaccounted for on 31st March 1869			19,402 11 3
Add timber felled in 1869-70			17,263 7 0
Total ...			36,666 2 3
Deduct value of timber sold as per paragraph 25	19,243 7 6		
Do. destroyed by fire, white-ants, &c.	281 4 0		
			19,524 11 6
† Balance unaccounted for on 31st March 1870			17,141 6 9

+ *Particulars of the balance*

	Rs.	A.	P.	Rs.	A.	P.
1,308½ maunds of sandal-wood, at Rs. 3 per maund...	3,925	8	0			
596⅜ cubic feet of black-wood, at Annas 12 per cubic foot...	447	4	6			
4,732⅜ cubic feet of Teak-wood, at Annas 10 per cubic foot	2,957	11	9			
1,534⅞ cubic feet of Vengay-wood, at Annas 6 per cubic foot	575	9	3			
2,524⅜ cubic feet of Ben Teak, at Annas 7 per cubic foot	1,104	8	8			
	9,010	10	2			
Value of Sandal-wood ready to be sold to contractor	8,079	0	1			
Value of Teak-wood do.	51	12	6			
				17,141	6	9

Financial Results.

28. *Receipts.*

Amount of timber sold as per para. 25				19,243	7	6	
Amount of Seignorage on Teak as per para. 25 ...				2,221	2	0	
							21,464 9 6
Expenditure. Pay of Office Establishment	156	0	0				
Do of the Conservancy do. ...	1,409	11	1				
Travelling allowance of the Conservancy Establishment...	212	12	11				
	1,778	8	0				
Office Contingencies	37	15	0				
				1,816	7	0	
Felling Sandal-wood... ...	759	3	11				
Digging Sandal-wood roots...	1,578	15	7				
Preparing Sandal-wood ...	1,122	9	2				
Carriage of Sandal-wood ...	3,769	15	6				
Purchase of Tools	37	0	0				
Feed and keep of Buffaloes.	272	11	9				
Sandal-wood Plantation ...	839	13	7				
Communication	100	0	0				
General Supervision	351	0	0				
Miscellaneous ...	52	0	0	8,883	5	6	10,699 12 6
Balance in favour of Government.							10,764 13 0

Value of timber in Depôts on 31st March 1869 ...	19,402	11	3
Do. do. 31st March 1870	17,141	6	9
Deficiency ...	2,261	4	6

BHOWANY FOREST.

29. BHOWANY FOREST.—*Forest worked by the Overseer.*—This forest during the past year has been worked by Overseer Grant, who has performed his duties diligently.

30. *Jungle Conservation.*—The usual quantity of Sandal-wood felled and stored in depôt amounts to 2,556 maunds, valued at Rupees 8,481-14-0.

31 *Formation of a Plantation.*—In August last certain land near Narinjapett was selected for a firewood plantation; as yet the land has not been handed over, but it is not of great importance

as in the Burghoor Hills we have wood sufficient to supply 200 miles of railway for centuries, and a project for floating it down at a reasonable rate has been submitted to Government. In the meantime experimental floatings will be made in the first freshes in August, and should the boatmen succeed in securing a large quantity of wood below the old Narinjapett anicut it can be towed to shore, made into a raft and floated to Erode for the supply of the railway. I fear there will be a difficulty in securing any large amount of timber, as the rapidity of the current in a fresh is so great that a basket-boat starting at the anicut to secure a log would probably land at least two miles down before it was secured; the boatman has then to walk two miles with his boat on his head before he could start again; the supply of boats being limited, it will be clear that the amount of wood to be secured is limited. The strength of the current was shown by our coming down in boats from Caverypoorum to Narinjapett, a distance of thirty-five miles in seven hours; and in bathing at a ghaut in the evening I was swept off my legs and should certainly have been carried over the anicut in five minutes, had I not fortunately caught a projecting rock at the bottom of the river by which I held on until I could recover my footing.

31. (*a.*) *Government Cattle.*—The bullocks have been employed in drawing water for the nurseries of the plantation.

32. *Criminal Trespass.*—Several cases have been prosecuted by the Overseer and some of the parties punished, especially when the case has been investigated by a European Magistrate.

33. *Jungle operations.*—The operations have been confined to preparing sandal-wood, issuing licenses, and conserving the jungles. Next year they will be extended by preparing fuel for the Railway.

34. *Health of the Establishment.*—There has been a great deal of fever, nearly all the establishment were laid up when I visited Bhowany in February last.

	Rs.	A.	P.
Seignorage on Teak	580	0	0
,, Black-wood...	24	0	0
,, Acha	1,554	0	0
,, Vengay	126	0	0
,, Jungle-wood..	178	0	0
,, Bamboos by Department	119	4	0
,, Firewood by Department	373	5	4
,, Firewood, bamboos, Valumbark and charcoal rented	1,399	11	11
	4,354	5	3
Sandal-wood	10,022	8	0
Total Revenue...	14,376	13	3

35. *Sale of Timber.*—The sale by license of Teak, Vengay, Acha, &c., amounts to Rupees 4,354-5-3, and of Sandal-wood amounts to Rupees 10,022-8-0, or making a total of Rupees 14,376-13-3, which has been carried to the credit of the Forest.

36. *Stock of Timber.*—The quantity of timber unaccounted for is hereunder particularized, which at the rate of Rupees 3 a maund amounts to Rupees 427-8-0.

	Rs.	A.	P.
Value of timber unaccounted for on 31st March 1869	1,526	2	8
Add timber felled in 1869-70	8,923	13	4
	10,450	0	0
Deduct value of timber sold as per paragraph 35	10,022	8	0
Balance unaccounted for on 31st March 1870	427	8	0
* Particulars of the Balance.			
142½ maunds of Sandal-wood, at 3 Rupees a maund	427	8	0

37. *Timber supplied to Department Public Works.*—None.

Financial Results :—

	Rs.	A.	P.	
38. *Receipts.*—Value of timber sold as per paragraph 35	10,022	8	0	
Amount of Seignorages on teak, &c., as per paragraph 35	4,354	5	3	
				14,376 13 3

		RS.	A.	P.				
Expenditure ...	Forest Conservancy Establishment	1,944	0	0				
	Travelling allowance of do.	456	0	0				
		2,400	0	0				
	Office contingency ...	20	13	0				
					2,420	13	0	
	Felling Sandal-wood ...	773	15	0				
	Preparing Sandal-wood ...	152	1	0				
	Carriage of Sandal-wood ...	1,706	11	6				
	Purchase of tools ...	170	0	0				
	Feed and keep of Bullocks.	100	0	0				
	Communication... ...	15	0	0				
	General supervision ...	264	0	0				
	Miscellaneous charges ...	21	0	0				
					3,202	11	6	
							5,623	8 6
	Balance in favour of Government...						8,753	4 9
Value of wood	Depôt on 31st March 1869 ...	1,526	2	8				
Do.	do. on 31st March 1870...	427	8	0				
	Deficiency ...	1,098	10	8				

39. COLLEGAL FOREST.—*Forest worked by the Overseer.*—This forest was worked in the first part of the year by Overseer Spring and for the last six months by Overseer Appavoo Moodelly, who has given every satisfaction.

40. *Jungle Conservation.*—The conservation of the jungles has latterly been attended to most strictly.

41. The quantity of sandal-wood felled and stored is 6,247 maunds, valued at Rupees 20,629-3-0.

42. *Principal operations.*—The operations have been confined to sandal-wood felling, forming a plantation, and conserving the jungles.

43. *Sandal-wood Plantation.*—A new plantation has been opened near Vyloor, where the climate and soil is very favourable to the growth of sandal-wood ; 12 acres have been planted, and preparations will be made for laying out an extensive plantation of from two hundred to five hundred acres.

44. *Criminal Trespass.*—Criminal prosecutions are conducted here with difficulty, and convictions or even committals are not easily obtained.

	RS.	A.	P.			
From the Depôt—						
Sandal-wood	16,450	0	0			
Teak-wood...	60	0	0			
Jungle-wood	61	8	0			
				16,571	8	0
Seignorages—						
Teak-wood	210	0	0			
Vengay-wood	449	0	0			
Jungle-wood	48	0	0			
Fire-wood, bamboos, charcoal, and valum-bark (on contract.)	1,805	0	0			
Bamboos by Department	18	3	0			
Fire-wood do.	125	0	0			
Confiscated timber	101	8	0			
				2,256	11	0
Total Revenue...				18,828	3	0

45 *Sale of Timber.*—Sandal-wood, &c., to the amount of Rs. 16,571-8-0, has been sold to the merchants and the Seignorages realized amounts to Rupees 2,256-11-0, or a total of Rupees 18,828-3-0 has been carried to the credit of the Forest.

46. *Health of the Establishment.*—The usual amount of fever has prevailed amongst the establishment.

47. *Stock of Timber.*—The quantity of Sandal-wood unaccounted for on 31st March 1870 is here-under particularized :—

				Rs.	A. P.
Value of wood unaccounted for on 31st March 1869				2,151	6 6
Add timber felled in 1869-70				21,838	5 0
				23,989	11 6
	Rs.	A	P.		
Deduct Timber sold	16,571	8	0		
Supplied to Sandal-wood Godown for the Department.	10	0	0		
Destroyed by white-ants, &c.	74	0	6		
				16,655	8 6
* Balance on 31st March 1870				7,334	3 0

* Particulars .—

	Rs.	A.	P.		
287 maunds of Sandal-wood at 3 Rupees per maund ...	861	0	0		
100 cubic feet of Teak-wood at 10 Annas per cubic foot	62	8	0		
58 do. of Black-wood at 12 Annas per do. ...	43	8	0		
138¼ do. of Jungle-wood at 8 Annas per do. ...	69	2	0		
Value of wood ready to be sold to Contractor ...	6,298	1	0		
				7,334	3 0

Financial Results :—

Receipts.

48. Sale of timber as per paragraph 45				16,571	8 0
Seignorages realized as per paragraph 45 ...				2,256	11 0
				18,828	3 0

Expenditure.

Pay of Forest Conservancy Establishment ...	1,940	2	0		
Travelling Allowance of do. ...	456	0	0		
	2,396	2	0		
Office Contingency	15	8	0		
				2,411	10 0
Felling Sandal-wood	1,166	12	0		
Sawing do.	48	6	0		
Preparing do.	362	15	3		
Carriage of do.	3,138	11	0		
Digging Sandal-roots	152	12	0		
Purchase of Tools	3	0	0		
Plantation Charges	74	2	10		
General Supervision	179	10	10		
Building Sandal-godown ...	43	0	0		
Miscellaneous Charges	47	11	6		
				5,217	1 5
				7,628	11 5
Balance in favour of Government...				11,199	7 7

Value of timber unaccounted for on 31st March 1869 ...	2,151	6	6
Do. do. on 31st March 1870...	7,334	3	0
Increase in Stock ...	5,182	13	6

I have the honour to be, &c.,

(Signed) H. R. MORGAN, Lieut.-Col.,

Deputy Conservator of Forests

LIBRARY.

APPENDIX R.

CAMP MANGALORE, *13th April* 1870.

From

H. F. WINTER, ESQ.,
Assistant Conservator of Forests, South Canara,

To

MAJOR R. H. BEDDOME,
Officiating Conservator of Forests.

SIR,—*South Canara Forests.*—I have the honour to forward the Annual Reports of the Forests under my charge during the official year 1869-70, out of which one month had passed before I joined the Department.

2. *Budget Grant.*—The total amount sanctioned for the year for conservancy and working charges was Rupees 14,000, and Rupees 9,474 for establishment, making a total of Rupees 23,474; out of this amount only Rupees 8,850 has been drawn for conservancy and working charges, and Rupees 7,633-10-5 for establishment and office contingencies, leaving Rupees 6,990-5-7 of sanctioned amount not spent.

3. *Receipts.*—The receipts for the year amount to Rupees 30,600-4-9 and the expenditure to Rupees 16,963-1-9, leaving a clear balance in favour of Government of Rupees 13,637-3-0, besides wood in store valued at Rupees 32,053-8-0.

4. *Timber Felled.*—The quantity of timber felled during the last year has not been very great, as the stock on hand is already very large and will have to be disposed of. 152 Bombay candies of Black-wood have been felled for the Bombay Government and 565 Bombay candies Mango for a merchant in Mangalore.

5. *Elephants.*—As there are no elephants belonging to the Department in this District and as it is not always easy to get them from the elephant merchants when required, great delay is caused at times. For hired elephants ten rupees a day is charged.

6. *Floating.*—In the Cassergode talook few logs reached the coast depôt, the river having dried up sooner than was expected. All the timber in the different jungle depôts in the Uppinangady talook have arrived at the coast depôt. In Udupi and Cundapore talooks 254 logs, 441½ Bombay candies, have been brought to the coast.

7. *License system.*—The total amount of timber felled by the ryots during the year under the License system amounts to 228½ Bombay candies reserved, and 406 Bombay candies of jungle-wood out of Government jungles, and 206 Bombay candies of reserved timber out of the ryots, Kumakies.

8. *Timber sold from Depôts.*—455 Bombay candies of timber have been sold from the different depôts. The quantity is very small, when it is considered how much timber is stored away in every depôt.

9. *Timber supplied to Public Works Department.*—The amount of timber supplied to the Public Works Department is not very large this year; though a large amount has been paid by them for timber which was felled last year. For some of the timber felled and supplied to the Department during the year credit has not been granted to the Forest Department. The total amount credited for is Rupees 8,942-5-4 for 1,269⅓ Bombay candies. The demand for timber by the Public Works Department has been very small this year, as a great number of the works have been stopped.

10. *Seignorage on Bamboos.*—With the sanction of the Acting Collector, the seignorage on bamboos was raised from Rupees 7-8-0 to Rupees 15 per thousand, as the demand was

getting very great ; and bamboos were fetching about Rupees 15 per hundred. Licenses have been issued for cutting 249,850 bamboos during the last year. This does not amount to one-half of what is actually felled, as the ryots fell bamboos free of seignorage for their own use and often sell them on the sly or smuggle them down to the coast in boats on dark nights.

11. *Confiscated Timber.*—The amount of timber confiscated does not amount to much ; some fine young Teak trees, measuring 20¾ Bombay candies, were found in the Naranky Forest ; they were said to have been felled by a Mangalore merchant. At Heggangy in Udupi talook I confiscated about Rupees 500 worth of wild Jack and Kiralbogi cut by a ryot, who claimed the land as his Kumakie, but which turned out to be Government land. The timber has not been sold as yet. The man was prosecuted and fined Rupees 200, losing the timber as well. The Revenue Inspector at Mulky was also fined Rupees 100 and dismissed from Government service for cutting some wild Jack trees.

12. *Cutting Creepers.*—In Sulia Forest, where there are a great number of young Teak saplings, all the vines and brushwood have been cleared away, and a number of saplings pruned.

13. *Forest Products.*—The only forest products in this district worth collecting are the cardamums, which are to be had in some of the forests. At Kadamakal the cardamums are collected by the Department. The Mula Nedgal jungles are let out to one Heggerdy for five years at Rupees 800 yearly ; this is a very small sum, as cardamums worth about Rupees 4,000 are yearly gathered out of these forests. Two years of the lease have expired and unfortunately there remain three more.

14. *Teak Plantation.*—The Teak plantation at Parapa is doing well, and things are going on satisfactorily ; up to this year about 70,471 plants have been put down, covering about 30 acres. The few Black-wood plants that are at Kotiardy are looking well. About 40,000 Catechu plants were put out during the last year, but do not seem to get on very fast.

15. *Charges for Stealing.*—The number of charges made against different parties for felling timber without licenses amount to seventy-two, out of which fifty-five have been convicted. In one case a Revenue Inspector was fined Rupees 100 and dismissed, thus teaching others a good lesson. The offences are not so great this year, as people now begin to find out it is not an easy matter to evade detection.

16. *Health of Establishment.*—Many of the establishments have suffered very severely from fever and dysentery during the year. The Overseer of Uppinangady Range, Mr. Goudie, has been very ill for the last year, and unable even to leave his room ; he will never, I am afraid, be able to take up his post again. One poor Peon died of fever, and many others have suffered severely. I certainly think that all the Peons ought to be supplied with thick coats ; the monsoon down here is something dreadful, the rain continuing incessantly for nearly four months. During this time it is perfectly impossible for these poor fellows to get about.

17. *Demarcation.*—The demarcation of the forests in this district is certainly a thing that ought to be taken in hand without any delay. To point out which are reserved and which are unreserved forests is an impossibility ; for, go where one will there are nothing but jungles.

18. If Government are willing to supply me with the necessary instruments and a staff on a small scale, I would willingly undertake the work myself, attending at the same time to my other duties.

19. *Puiswunni River.*—The Puiswunni is a river of great importance, as it is the only river that runs through a vast amount of forest land. It takes its rise about six miles below Macera on the Macera and Sampajee Ghaut road and runs through the Sampajee and Soolia Forests into the sea at Cassergode. In many places the river is all right, and floating pretty easy work, but in some places there are regular walls of stones right across the river, which makes it almost impossible to get large timber across. This delays work for days and days ; and expenditure is very great. After having carefully examined these obstructions, I have come to the conclusion that it would be well worth spending a thousand rupees in blasting away some of the rocks to the width of about 12 to 15 feet, so as to enable all timber to pass

free. If this project were carried into force, I feel certain that all timber could be floated down to the coast at half the present cost, and there would be a great saving to the Department.

20. *Subordinates.*—The subordinates of the establishment are certainly under-paid when one sees the amount of work they have to go through. In the Revenue Department two Clerks are allowed for about the same work that one Clerk in the Forest Department has to get through, and on much higher salaries, as well as obtaining a high rate of batta when out in the district. All Peons in the Revenue Department are also allowed batta when sent out. I certainly think that some change ought to be made at once. As there is an extra amount of Rupees 118-8-0 sanctioned by Government, I propose making the following change, which will I am sure raise the spirits of the subordinates a little and make them work better. The under-mentioned subordinates deserve to have their pay raised, and I trust they will not be refused, viz. :—

	Rs.	A.	P.
The Office Writer per mensem	10	0	0
4 Gumastahs, Rupees 5 each per mensem ...	20	0	0
16 Peons, Rupee 1 each do.	16	0	0
Total...	46	0	0
Batta when out—			
Writer, 3-10ths of pay	10	8	0
Office Gumastah, 4 Annas daily	7	8	0
2 Office Peons, 2 Annas each daily	7	8	0
Total...	71	8	0
4 Head Peons are urgently required at Rupees 9 per mensem	36	0	0
Total...	107	8	0

From the above it will be seen that my demand is not a very large one. Two extra Peons must be appointed to the Uppinangady talook, as most work is done in this talook, and there are only three Peons.

21. *Financial Results.*

Expenditure.

A.—Conservancy and Working.	Rs.	A.	P.	Rs.	A.	P.
I. Timber expenses for felling, &c.	6,184	0	4			
II. Purchase of tools and plant	17	0	0			
III. Feed and keep of elephants and cattle	2,122	5	11			
IV. Charges connected with the collection of Revenue	24	14	8			
V. Plantation	751	7	8			
VI. Forest work, viz., cutting of creepers, &c. ...	50	0	0			
VII. Communication, &c.	179	11	3			
				9,329	7	4
B—Establishment.						
I. Pay of Executive Officers	2,230	10	4			
II. Office Establishment	420	0	0			
III. Forest Conservancy Establishment	3,612	0	0			
IV. (*a*) Travelling allowance of Executive Officer ...	721	10	6			
(*b.*) Do. Subordinates ...	510	0	0			
Office contingencies	139	5	7			
				7,633	10	5
				16,963	1	9

Receipts.								
		Rs.	A.	P.	Rs.	A.	P.
I. Sales of timber from depôt		4,030	2	11			
II. Supply of do. to Department Public Works ...		8,942	5	4			
III. Confiscations		7	9	0			
IV. Seignorage from firewood, &c.		9,465	11	10			
V. Firewood for Sandal Stills, &c.		8,123	1	3			
VI. Miscellaneous, &c.		31	6	5			
					30,600	4	9
Balance in favour of Government...					13,637	3	0
Timber on hand on 31st March 1869		34,740	4	0			
Do. felled during 1869-70		10,836	8	0			
		45,576	12	0			
Deduct timber sold to public, &c.	12,972 8 3						
Do. damaged	550 11 9	13,523	4	0			
Balance on 31st March 1870		32,053	8	0			
Do. on 31st do. 1869		34,740	4	0			
Decrease in stocks...					2,686	12	0
Net balance in favour of Government...					10,950	7	0

I have the honour to be, etc.,
(Signed) H. F. WINTER,
Assistant Conservator of Forests,
South Canara.

APPENDIX S.

No. 23.

CAMP, TELLICHERRY, 13*th May* 1870.

From

J. W. CHERRY, ESQ.,
Assistant Conservator of Wynaad Forests,

To

COLONEL H. R. MORGAN,
Deputy Conservator of Forests,
Ootacamund.

SIR,—I have the honour to submit my Annual Administration Report of the Wynaad Forests for the past official year.

ESTABLISHMENT.—*Detail of operations.*—The establishment for the past year has consisted of one Writer, one Overseer, one Duffadar, and ten Peons. Besides the above, the sanctioned staff includes an Assistant Sub-Overseer and an Office Gumastah, whose services were dispensed with by the Conservator till such time as the regular operations of the range should be resumed. As felling operations are now being carried on, their services are needed, and I beg that they may be entertained as soon as possible. If the increased operations proposed in the body of this report be permitted, I would strongly recommend the sanction of a third-class Overseer on Rupees 60 a month in place of the present Overseer's post of Rupees 30, which is the pay allowed to my only responsible subordinate in the forests, and is too low a remuneration for the services required. At Mr. Turnbull's disappearance (and in connection with which) my writer's pay was temporarily reduced for carelessness, from Rupees 60 to Rupees 40 a month. Since that time his diligence and patience have fully atoned for his fault; I have therefore no hesitation in recommending that his sanctioned pay be now resumed. I have also to bring to notice that the pay of the peons on the establishment is undoubtedly too low. Rupees 7 and $\frac{1}{10}$ths of pay when travelling is no more than the pay earned by coolies in Wynaad, and is certainly insufficient to induce a reliable person to face the duties, and risks attending the bearer of a Wynaad Forest Badge. The peons employed by other Wynaad revenue authorities earn Rupees 8 a month and 4 annas a day when travelling. The D. P. W. peons receive a consolidated allowance of Rupees 10-8-0 per mensem. I would therefore propose and recommend that six out of the ten peons on the establishment receive Rupees 8 a month, and that an additional Rupees 2 a month be allowed to the two travelling peons who accompany me on my tours. This arrangement would add Rupees 10 to the charges for the establishment, but is to be recommended if the high prices of supplies, and the risks attending a sojourn in the forests are taken into account. With this change there will be four peons earning Rupees 7 a month. These peons will reside in the heart of the forests, and will be chosen from the Forest Cooroombers, to whom Rs. 7 a month will be very fair pay. The health of the Establishment has been better than during the past three years. One peon however has died, and two peons have become prematurely old and useless from long residence in the feverish jungles.

Conservancy.—In a large Forest range like this in Wynaad it would be almost impossible to carry out a *strict* conservancy; however every effort is made to check fires, keep out cattle, and prevent illicit felling. Now and then we are able to free some reserved trees from creepers, and give others light and air by the cutting away of smothering foliage.

Condition of the Forests.—The reserved forests in my charge running in a belt averaging six miles in breadth and extending from the Coorg frontier to the Mudumallay boundary, a distance of some 30 miles, may be said to comprise (after deducting the Poolpully temple and the Padre

lands lying in the heart of the forests) some 150 square miles of heavy forests, in which Teak and Mutty abound, and containing in parts great quantities of Hone, Black-wood, Vengay, Ben-teak and other valuable timbers. It is impossible to estimate the yield from this range, but I should think 30,000 cubic feet of Teak might be taken annually to market for many years without any visible change in the condition of the forests. Of the inferior timbers there is also a large supply, but these have not yet realized remunerative rates, and should stand for a better market. There are few Bamboo tracts in this range, and these few have been desolated by the recent seeding and decay of the bamboo clumps, and their subsequent extinction by fire. Within the last four months however bamboo shoots have made their appearance, and, as their growth is very rapid, we may look for a fair supply of bamboos in two years.

Plantations and Nurseries.—The Officiating Conservator has called for a Memorandum of remarks on this head; I have neither plantations nor nurseries to report upon. With regard to their formation, I cannot see that they would at all suit in a large range, where felling *should* be carried on to three times the present extent and *would be* provided a greater number of workmen and purchasers could be found.

Timber felled.—Felling operations were commenced in February at last year's rates of 1 Anna a cubic foot felled and squared; 5,428½ cubic feet of teak had been measured, and Rupees 339-4-1 adjusted up to the 31st March 1870. Of this 3,825⅓ cubic feet were felled this year, and 1,602⅔ cubic feet were felled in 1868; other 2,000 cubic feet have been felled this year, but the measurement had not been taken by the 31st March 1870. No portion of these forests is worked by the License and Voucher system, nor is it easy to obtain contracts for felling; Coorumbers and other jungle-men, are therefore collected at the felling season, and the felling is carried on under the immediate supervision of the Overseer. The average annual yield from the Forests of Coodracotta, Chedleth, Coorchart, and Pambra has been from twelve to fifteen thousand cubic feet. This is a very small supply from such extensive tracts, and it is a matter of great regret that want of forest roads, facilities in carriage, and activity among contractors and purchasers, should have been the cause of a loss to Government by the deterioration year by year of over-ripe Teak, which, owing to the want of funds and the reasons already given, was not felled and stored. I believe from my examination of the whole range, that with thirty miles of carefully laid out cart-road, with two elephants and a few pairs of bullocks with their carts, we could extract and store annually 20,000 cubic feet (of Teak alone) without depriving the forests of any timber that would not be ripe enough, to spoil, if allowed to stand. The Coodracotta and the Pambra Forests have scarcely been touched, and there is much Teak there that should be felled and stored to prevent a further loss.

As the demand and market value of Teak in Mysore is now improving, and as the carriage of the timber when once out of the forests is easier, it would be a pity to grudge expenditure on forest roads, &c., and lose the benefits to be derived from them. Colonel Morgan, I believe, agrees that these forests should be far more extensively worked, and I trust he may coincide in my views on the subject. Trusting that the roads leading to Tellicherry and Calicut will shortly entice a sufficient bandy traffic to gratify our hopes of carting timber from the forests at Coodracotta to the coast, I would recommend that logs should, at once, be collected and stored from those forests.

Timber carted.—An attempt was begun in February to collect and cart to depôt the logs that have been lying for years in the forests, and which from their size and inaccessible position have hitherto defied all endeavours to remove them. This year the attempt has been more successful and two-thirds of the quantity was brought to the main forest road before the close of last official year. They will probably all reach Goondry before the first of the coming monsoon. As these collected logs have not all been measured, it is impossible to say whether the estimated value of them Rupees 4,520-9-6 was correct. I am inclined to think it is rather under than over, and yet I am very doubtful whether the full number of cubic feet 18,082 will be forthcoming. In the year's accounts it will be seen that Rupees 1,164-7-10 has been charged for carting 5,308$\frac{1}{37}$ cubic feet of timber. This quantity was carted in the previous year and was not then adjusted. The rates for carting have lately slightly fallen, but one still very high,

owing to the state of the forest roads, and to the want, on our part, of means to deliver the logs *at the roads* to the contractors. The last carting rates were Rupees 8 an average first-class log of 32 cubic feet for a distance of from 8 to 10 miles, and Rupees 3-12-0 an average second-class log of 20 cubic feet for the same distance.

Timber Floated.—Floating from Goondry to Hirnandy is easy, and rates are not high, viz., Annas 2 a cubic foot for a distance of about 40 miles. A great many logs, at different times, have broken away from their rafts during heavy floods, these are being recovered with difficulty from the banks and bends of the river.

Rupees 4,662-10-0 has been charged in the accounts for floating 31,816$\frac{50}{252}$ cubic feet. Of these 9,437$\frac{9}{4}$ cubic feet were floated in 1867, and 12,57$\frac{24}{127}$ in 1868. 9,806 cubic feet only were floated during the past official year.

Depôts.—"Baigur," formerly a depôt for Wynaad timber, has been deserted; the remaining logs were removed this year to Hirnandy. I do not think we will need to make use of Baigur again as a depôt. Some correspondence has passed relative to the establishment of a depôt in Mysore. The question is one of great importance to the Wynaad range, and I trust that the suggestions from Major Beddome, now before Government, may meet with their approval.

Timber and Produce Sales.—The timber sold this year has realized Rupees 10,757-7-0, as follows:—

	Rs.	A.	P.
Teak	10,205	15	0
Black-wood...	26	11	0
Hone	319	13	0
Teak pieces...	200	0	0
Fire-wood	5	0	0
Total...	10,757	7	0

which with the sum of Rupees 35-8-0 for forest products, is the revenue credited for the year under report. This sum falls short of the estimated revenue by about Rupees 4,200, which may be put down to the want of confidence (among merchants) arising out of the unfortunate breach of trust by Mr. Turnbull. In the beginning of the year the rates for Teak were Rupees 1 and Rupees 1-1-0 a cubic foot delivered at Hirnandy (20 miles from the Mysore Town), but owing to the stoppage of Public Works the timber has fallen to 14 Annas a cubic foot. From Mysore there is little or no demand for other Wynaad reserved timbers. At the coast (if a depôt was formed) these inferior timbers would sell well, and a better price could be obtained for Teak than that now received from Mysore. Rupees 35-8-0, for forest products, is a *very small* portion of the sum to be annually obtained from these forests by the sale of honey, wax, gums, dyes, &c., and of which sum two-thirds would have been obtained this past year, had not the Revenue Board deprecated the sale (by the Department) of this class of produce, as interfering with the rights and privileges of the jungle tribes.

Roads.—The roads in this range are decidedly bad, are of small extent, and badly provided with bridges. The great difficulty in obtaining labour has been the cause of this, but I think an effort might soon be successfully made to improve the communications. I believe very fair bandy-roads, 12-feet broad, could be opened in these forests at an average cost of 250 to 300 Rupees a mile.

Buildings.—With the exception of one office-room, at head-quarters, the Department does not possess a single building in this range. There is a building at Chedleth, built at the expense of one of my predecessors, and which being of the greatest benefit to the succeeding officers, has been privately repaired by them every year. It seems to me that Government need only know this to ensure the erection of suitable "Forest huts," at those depôts where the constant supervision of a small establishment, and the frequent visits of the officer in charge are needed. In the meantime Colonel Morgan has permitted the building of a small hut at Goondry Depôt, which will cost about Rupees 100, and will be finished, I hope, before this monsoon.

Boundaries.—The boundaries of this range, though marked by the disposal of stones, are not clearly known, or easily traced. The man employed by the late Lieutenant Fullerton to demarcate the forests appears to be the only person who can point out the position of *all* the boundary stones. I purpose therefore to employ him a month for that purpose, at the same time giving him the means to improve and render more distinct those parts of the boundary which are the most likely to give rise to disputes.

Theft and Mischief.—The only mischief during the year in these forests has been that of Raghy Takkul, a mischief quite uncontrollable unless the growing crop of grain is either destroyed or appropriated when the trespass and mischief are discovered; *such* severity only would I am sure in a year or two effectually stop any further attempt at Takkul.

Contemplated operations.—The Officiating Conservator has called for particular remarks on this head. The tenor of this report will show the operations. I recommend for contemplation the proposal of works on a larger scale, the purchase of elephants, bullocks, &c., the erection of buildings, the opening of roads, the formation of depôts in the Town of Mysore and on the Western Coast, and the storing of timber. I propose this year, 1870-71, to improve the existing roads; to complete the building at Goondry, and repair the one at Chedleth; to have the boundaries more clearly defined; to stock the Goondry Depôt with 20,000 cubic feet of Teak, and 1,000 cubic feet of Black-wood from the Coorchart and Chedleth forests, and to float to Hirnandy a sufficient number of logs required to make up the quantity that will realize the estimated revenue for this year and next; this, I think, is all that the funds at my disposal this year will permit me to do.

Out-standing Advances.

The advances out-standing on the 31st March 1870 are as follows :—

						RS.	A.	P.
Coorumbers	..	...	...	...	...	32	1	4
Keshva Rao	...	...	...	...	...	191	3	9
Lingani Pillay	...	...	...	...	...	58	0	9
Daly Vencata	...	...	...	...	...	500	0	0
Mr. Van Ingen	...	...	...	...	...	2,000	0	0
,, Turnbull	...	...	...	...	...	534	1	8
Muttusawmy Pillay		...	...	...	...	75	0	0
					Rupees...	3,390	7	6
Cash in hand	...	...	...	...	...	15	4	7
					Rupees...	3,405	12	1

From this list it will be seen that with the exception of Mr. Van Ingen's and Mr Turnbull's (both out-standing till the result of Mr. Turnbull's trial is known) the advances in this range are not heavy.

Financial Results.

Expenditure.

A.—*Conservancy and Working.*				RS.	A.	P.
I. Timber expenses for felling, carting, etc.			...	6,023	11	11
II. Charges connected with the collection of revenue			...	1	0	0
III. Communication, etc. ...	...	...	...	10	0	0
				6,034	11	11

B.—*Establishment.*

I. Salaries—			
1. Pay of Executive Officers ...	2,400	0	0
2. Office and Forest Conservancy Establishment	1,762	1	9

	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
II. Travelling allowance—									
1. Executive Officers	720	0	0						
III. Office Contingencies	161	0	0						
				5,043	1	9			
							11,077	13	8
Receipts.									
Sale of timber	10,752	7	0						
„ „ Forest produce	35	8	0						
„ „ Fire-wood	5	0	0						
Miscellaneous Receipts	0	12	4						
				10,793	11	4			
Balance against the forests	...		...	...		...	284	2	4
Value of timber on hand, 31st March 1869	...		...	55,924	14	9			
Add timber felled during 1869-70 ...	...		...	9,072	0	6			
				64,996	15	3			
Deduct timber sold during 1869-70 ...	...		...	10,752	7	0			
Balance on hand, 31st March 1870 ...	...		...	54,244	8	3			
Add decrease in stock	...		...	...		...	1,680	6	6
							1,964	8	10

Deficit.

In conclusion I am pleased to be able to report the satisfaction given by my subordinate during the past year.

I have the honour to be, &c.,
(Signed) J. W. CHERRY,
Assistant Conservator of Wynaad Forests.

OOTACAMUND, DEPUTY CONSERVATOR'S OFFICE, *19th May* 1870.

No. 833.

From

LIEUT.-COLONEL H. R. MORGAN,
Deputy Conservator of Forests.

To

MAJOR R. H. BEDDOME,
Officiating Conservator of Forests, Ootacamund.

SIR,—In forwarding the Assistant Conservator's Report on the Wynaad Forests for the official year 1869-70, I have the honour to add a few remarks.

2. *Forests Visited.*—During the past year I twice visited the forests in the company of Mr. Cherry, and took every opportunity of pointing out to him the best mode of working and conserving these very valuable forests. Mr. Cherry also accompanied me to Mudumallay to see the system carried on there.

3. *Depôts.*—The Depôts at Goondry and Hirnandy will be sufficient at present, the subject of a Depôt in Mysore is under consideration. I have also requested Mr. Cherry to try some experiments in carting a small quantity of timber from Kodrikote Forest down the Peria pass to Tellicherry. Should the demand on the coasts be favourable, and the carting charges reasonable, it will be advisable to have a depôt at Tellicherry, and reserve the timber of the above forest solely for coast sales; the timber is very superior and should command a high price for dock-yard works.

4. *Mysore Merchants.*—The Assistant Conservator spent some time in Mysore to restore confidence amongst the timber merchants, and has, by dealing liberally with them, restored that confidence the loss of which at one time threatened to leave us without a market for our timber.

5. *Roads.*—The Wynaad forests are very deficient in forest roads, and next year it will be advisable to lay out some money in main lines and feeders.

6. *Elephaats.*—At least one elephant is required in these forests for dragging the superior logs; the system at present is to cut them in half, thus destroying much of their value.

7. *Carts and Cattle.*—A few carts and bullocks would also be of service, if it were merely to keep the contractors in check.

8. *Conservancy.*—The Conservancy of these forests is not easy, as they are cut in half by private forests, over which a strict supervision is very necessary.

9. *Plantations.*—I propose this year to select a site for a Teak plantation, as I consider the Wynaad Teak the finest I have ever seen for all general purposes, and though there is much Teak in the forests it would be wise to increase the quantity.

10. *Establishment.*—Some of the Overseers and Peons are under-paid; this will be the subject of a special communication.

11. I did not anticipate, after the panic amongst the merchants, much revenue this year, and it is creditable to Mr. Cherry that he has succeeded in balancing revenue and expenditure.

I have the honour to be, &c.,

(Signed) H. R. MORGAN, Lieut.-Colonel,
Deputy Conservator of Forests.

APPENDIX T.

NELAMBUR, *27th April* 1870.

From

MR. J. FERGUSON,
Assistant Conservator of Forests,

To

MAJOR R. H. BEDDOME,
Conservator of Forests.

SIR,—I have the honour to forward the Annual Administration Report of the forests under my charge for the past official year 1869-70.

2. *Felling operations.*—Of timber, Teak and jungle-wood 200 and 400 logs respectively have been felled, and of these 150 dragged and stored in forest depôts; also, 904 timber logs and 5,457 saplings with 3,082 bamboos floated by temporary establishment during the season.

3. *Employment of Elephants.*—Hired elephants were employed on the above works.

4. Cash realized from stock and remitted to the Treasury was Rupees 10,454-5-10 exclusive of Rupees 1,287-1-5, part payment of stock sold in February last and paid only in April. The Treasury accounts for March were previously closed; also, Rupees 1,417-8-0, value of 630 cubic feet of Teak supplied to Bombay Marine Department, consigned in March, and payable only after delivery and measurement in Bombay, and value of market stock in depôt is Rupees 7,146-9-5 and of stock in forest depôt is Rupees 14,998-4-0, making a total of Rupees 22,144-13-5 to be accounted for in 1870-71.

5. *Plantations.*—Seedlings planted out, Teak 52,000, Black-wood 3,000, Kurrimurda 1,700, Erul 3,000; all these, as well as the older plantations are breaking into leaf from the early showers this year and are now looking extremely well.

6. Forest demarcation and survey were resumed on the 10th February last, and those demarcated and surveyed this season lying to the east of Nelambur towards the Carcoor Ghaut, viz., Panengode and Walsherrie plantations and adjacent natural forest lands; also, Pakode forest to the north of Panengode, intersected only by the Nelambur river; and also, Kannakutha, further north, extending east and north-east, five and six miles respectively, making a total of Boundary Circuits of twenty miles, at Rupees 509-1-8 cost for trace-cutting and survey labour, exclusive of the price of stones.

7. Fire tracing has been sufficient to prevent the jungle fires from spreading into the plantations or destroying timber this season.

8. Floating operations have this year been carried on with a temporary establishment appointed through the Tahsildar of Ernaad. 900 and odd logs, 5,457 saplings have been floated; the latter late in the season, and remain unsold consequently. Felling operations not pressed for the present.

9. *General Remarks.*—This year results have not at all justified expectations. The timber market has been exceedingly unfavourable; also, floating operations greatly retarded from fever; the whole party left quite prostrated, and in the case of the Head-floater and one Peon proved fatal, the others did not return, which caused unavoidable delay; the next party appointed was not energetic enough for the work; and there seems to be no way of procuring satisfactory contracts in the district. The want of an efficient Head-floater is much felt; the sanctioned establishment has not been at all efficient from change of hands strange to the work, although several of the men were very suitable, still, from the dread of fever, on the slightest illness, left, and operations having commenced at Nellicutta, a very feverish locality at the foot of the Ghauts, which enhances labour-rates and gives a plea for sickness and irregularity of those employed. Mr. Overseer Newman has been steady and persevering, and is gaining a knowledge

of operations generally and likely to be a good Range Officer; he is now in charge of operations at Nellicutta, viz., preparing site for fresh planting and Nursery beds.

The young man, Mr. Nathaniel Lavel, deputed from Ganjam, *vide* Board's Proceedings, dated 14th January 1869, No. 202, arrived early in April and left in July, having gone through the prescribed probationary course of Nursery and Planting operations. The lad was very intelligent and desirous and had every opportunity of attaining a knowledge of the Forest and Plantation operations generally, as well as in the mode of accounts and records connected with the Office, and, from his aptitude, I have no doubt will evidence the benefit derived during his course of training. Survey operations have been carried on with much difficulty from Stone-cutters objecting to work in the jungles; a contract was made through the Tahsildar to cut stones at Mambat, thence to be conveyed to the forests. The contractor carted them along the public road from where the greater part had to be carried by coolies four and five miles, causing much labour to the establishment, which should have been done by the contractor, from whom the Tahsildar has been requested to recover the carrying charges.

I regret the half-finished state of the bridges here. Cherripoya bridge in use for two years; one abutment slipped during the past monsoon remaining so. Kirimpoya bridge, the mason work completed and one span timber stood the high-water well; but Eddakara bridge, both spans were laid with beams passable for foot passengers only, had the centre pier swept away, and now all these are useless to the public. The two latter rivers have to be crossed going to Nellicutta, present site of planting operations, and during the monsoon is attended with danger as well as great loss of time; but I hope the Government will order these bridges to be completed before the next rainy season.

10. *Operations.*—52 Acres planted with 52,000 Teak seedlings.
10 Do. do. with 10,000 Black-wood do. and other jungle-wood seedlings.
2,300 Do. of plantation weeded.
590 Do. pruned.
70 Do. of site for fresh planting prepared.
600 Logs of Teak and jungle-wood felled.
240 Do. dragged into Forest Depôt.
904 Floated to Coast Depôt.
5,457 Saplings do. do.
3,082 Bamboos.

Financial Results:—

Expenditure.

	Rs.	A.	P.	Rs.	A.	P.
A.—*Conservancy and Working.*						
I. Timber for felling, etc.	1,619	7	11			
II. Purchase of tools and plant	139	8	8			
III. Rent of leased forests and others in the Revenue Forests	4,186	15	2			
IV. Charges connected with the collection of revenue ...	5,262	13	3			
V. Forest Survey, etc.	516	8	0			
VI. Communications, etc.	88	1	0			
				11,813	6	0
B.—*Establishment.*						
I. Pay of Executive Officers	2,400	0	0			
II. Forest Conservancy Establishments	2,458	2	5			
III. Timber Depôt and Work Establishments ...	936	0	0			
IV. Travelling allowances of Executive Officers ...	720	0	0			
V. Office Contingencies	86	15	8			
				6,601	2	1
				18,414	8	1

Receipts.	Rs.	A.	P.	Rs.	A.	P.
Sale of timber	6,029	13	8			
Do. of Saplings...	2,886	13	6			
Do. Fire-wood and bamboos	297	10	8			
Miscellaneous	1,240	0	0			
				10,454	5	10
Balance against the Forest	.....			7,960	2	3
Value of stock in Depôt on the 31st March 1869.	32,687	5	10			
And felled during 1869-70...	6,522	0	0			
Total value of stock	39,209	5	10			
Deduct timber sold during 1869-70. ...	9,214	5	10			
Value of stock on hand on 31st March 1870 ...	29,995	0	0			
Add decrease in stock of timber				2,692	5	10
Total against the Forest				10,652	8	1
Stock in Depôt.						
28 logs of Teak consigned to Bombay Marine Department	1,417	8	0			
Stock sold, measured, and unpaid in March ...	1,287	1	5			
8,000 Saplings	4,442	0	0			
Rupees ...	7,146	9	5			
Stock in Forests.						
293 logs Teak	4,688	4	0			
22 „ Black-wood	504	0	0			
125 „ Kurrimurda	2,274	0	0			
48 „ Poo-Murda	336	0	0			
414 „ Ben-teak	2,612	0	0			
80 „ Erul	584	0	0			
4,000 „ Saplings	4,000	0	0			
Value of timber on hand, 31st March 1870				22,144	13	5
Add deficiency in value of stock				7,850	2	7
Total Rupees ...				29,995	0	0

I have the honour to be, &c.,

(Signed) J. FERGUSON,

Assistant Conservator of Forests.

ORDER THEREON, 17th April 1871, No. 681.

THE general results of forest management in 1869-70, as gathered from this voluminous report, may be stated briefly thus:

There were removed from the forest, according to the departmental records,—

930,010 cubic feet of timber;
57,434 tons of firewood;
33,213 cart-loads of bamboos.

There were prepared—

16,504½ maunds of Sandalwood;
11,61,799 lbs. of Red Sanders; and,
1,588 Telegraph posts.

The financial results, as compared with the previous year, were—

	1868-69.	1869-70.
	RS.	RS.
Revenue	3,91,179	4,95,789
Charges	2,69,700	2,86,691
Net surplus...	1,21,479	2,09,098

and the value of timber in store at the end of the year was Rs. 4,40,903.

2. The report explains in great detail how these results were attained, and, generally, the Government consider that they testify favourably to the working of the department, notwithstanding the restrictions on their operations which due regard to vested interests compel the Government to impose.

3. The Government may define and regulate, but they cannot disregard and ignore the communal and immemorial rights of the villagers throughout the country. It is their place to hold the balance between unrestricted license as formerly existing on the one hand, and disposition to restrict too narrowly on the other, and it is perhaps scarcely to be expected that the compromise will fully satisfy either party interested.

4. Major Beddome may, however, rest assured that the Government are fully alive to the importance of the subject of forest-conservancy, and that the freedom of his operations is in no case checked without full consideration of the circumstances.

5. The Government gather from the report that, exclusive of the Canara ghaut-forests, there are about 750 square-miles of reserved forest, which are worked departmentally, but that, with this comparatively trifling exception, the objectionable license and voucher-system is still in force in the whole range of country with which the Forest Department have any concern. The Government desire that it shall be the constant effort of the Conservator and his deputies to extend the depot and periodical auction-system as much as possible, and to put a speedy end to the license and voucher-system which is fraught with facilities for fraud and oppression.

6. The Government observe that, in addition to the "Conolly" Teak plantations in Malabar which are an established and most valuable success, Teak planting is under trial in Kurnool, the Annamallays, Bolumputty, Mudumullay and its western vicinity, in the Cumbum valley of Madura, and in South Canara,

and that the results hitherto obtained are very promising. The Government will look with interest for further reports of the progress of the experiment.

7. Sandalwood planting has been tried with success in Cuddapah and Kurnool districts and in the Seegoor and Collegal ranges of Coimbatore. The Government would suggest South Canara as a promising field for the extension of this experiment, as the tree is indigenous in parts of that district. The Blackwood and Catechu plantations in Canara are interesting experiments.

8. The Government note with interest the details of the Babul, Casuarina, Red Sanders, and "Pithicolobium saman" plantations; the latter being a Central American tree esteemed very valuable for fuel, the seed of which was obtained from the Ceylon authorities. Much has been done since this report was written for the extension of fuel-reserves and plantations in view of the railway requirements, and too much importance cannot be attached to the subject.

9. The Government have already passed separate orders on most of the references mentioned by Major Beddome. The question of the re-organization of the department is still under consideration.

10. Finally as regards the moot-question of the collection of jungle-products. The Government have deliberately and repeatedly declared that they will not sanction any step in the direction of monopolizing these products, the collection of which affords the only employment and means of subsistence open to the inhabitants of wild forest-tracts; but they are prepared to consider favourably any proposals which Major Beddome may submit through the Board of Revenue, and which may seem calculated to secure a more certain and otherwise improved market to the tribes in question for the products they may gather, by offering to them advantages superior to what they now obtain by their traffic with the low country dealers.

11. Any plan which Major Beddome may devise for this purpose must be communicated to the Collectors of the districts concerned for their remarks.

(True Extract.)

(Signed) W. HUDLESTON,
Secretary to Government.

Financial Statement of the Forest Conservancy Department, for the official year 1867-68, *in comparison with that of* 1866-67

Forest Ranges		Charges inclusive of Fixed Establishment and Office Contingencies.		Revenue inclusive of Receipts, Seignorage and sale of Timber, &c.		Value of stock of Timber on the		Remarks.
		1866-67.	1867-68.	1866 67.	1867-68.	31st March 1867.	31st March 1868.	
Ganjam	Gumsur and Suradah	2,993	4,535	11,057	6,841	1,403	1,136	
Vizagapatam	Golgondah	1,095	1,238	184	284	...	...	
	Cuddapah	6,259	6,596	25,877	36,667	7,564	6,869	
	Kurnool	11,035	8,787	21,366	36,189	2,235	4,307	
	North Arcot	2,117	3,873	2,743	9,910	689	627	
	South Arcot	480	2,343	3,000	4,310	...	44	
	Madura	6,464	7,704	5,580	5,030	3,242	7,367	
	Tinnevelly	363	1,255	2,364	8,156	...	...	
Coimbatore	Anamallai	19,136	33,210	12,040	58,959	2,72,121	2,16,547	
	Bolumputty, Chennat Nair and Walliar	1,313	4,626	405	12,177	7,011	6,792	
	Mudumallai	47,072	54,164	69,611	65,059	1,94,775	1,86,825	
	Sigoor and Sathiamungalum	9,683	10,538	26,514	29,152	37,173	31,069	
	Bhowany	6,643	6,676	16,291	15,895	1,453	1,355	
	Collegal	7,730	7,103	16,866	17,846	3,645	2,611	
	Neilgherry Sholas	4,500	5,417	4,321	4,550	...	...	
	Australian Plantation	1,640	1,757	514	931	..	....	
Malabar	Salem	19,517	36,679	57,519	53,567	8,756	9,242	
	South Canara	19,587	17,708	23,924	40,043	48,624	35,542	
	Wynaad	17,039	17,177	11,425	15,518	46,369	44,377	
	Nellamboor	12,248	14,286	27,006	3,097	43,476	40,196	
	Total Rs...	1,96,914	2,45,672	3,38,607	4,24,184	6,78,536	5,94,816	
Pay of the Conservator inclusive of Establishment and Office Contingencies		20,235	27,168					
	Total Rs.....	2,17,149	2,72,840					
Deduct Expenditure		...	..	2,17,149	2,72,840			
Actual profit to Government		...	.	1,21,458	1,51,344			
Deduct difference in value of Timber on hand on the 31st March 1868 from the amount of the 31st March 1867				11,127	83,720			
	Financial Results.....			1,10,331	67,624			

N. B.—The Revenue and charges of certain Ranges as well as the amount of Timber unaccounted for in the Depôt on 31st March 1868 having undergone revision in the Central Office, after the Annual Administration Report had been printed, the Financial Table appended thereto has been also necessarily revised.

ORDER THEREON, 13th August 1868, No. 2,155.

1. The Administration Report of the Acting Conservator of Forests for 1867-68 shews that the Department continues to work satisfactorily.

2. Captain Beddome appends to his report a condensed statement of the outlay, receipts, and stock of timber in the various Ranges in 1866-67 and 1867-68, shewing the results of the operations of the year under report compared with those of the previous year. The charges for 1867-68 were Rupees 2,72,840, and the receipts Rupees 4,24,184 ; but it appears that the value of the timber in stock on 31st March 1868 was less than the value of the stock on the 31st March 1867 by Rupees 83,720. The net financial result of the year was thus a profit of only Rupees 67,624.

3. The operations of the Department have been extended in various parts of the Presidency. The Yellakondah Hill Forest in Kurnool and the Jungles in the Polur and Vellore Talooks of North Arcot have been brought under regular conservancy, and the introduction of the license system in the forests and slopes of the hills in the Pollachy and Oodymallay Cottah Talooks of Coimbatore has completed the chain of conservancy between the Neilgherry and Pulney Hills.

4. Due attention has been paid to the formation of Railway fuel reserves, separate tracts having been marked off for this purpose in the Ballay Pullay Jungles of Cuddapah, in the Walliar Jungles, and at three places in the Salem District. The sowing of tree seed broad-cast has been attempted in Cuddapah and Salem, but has proved a failure, and it is considered that in all dry districts planting from nursery beds will be found to be the most economical system.

5. Planting operations have been carried on with success in the several Ranges, and in North Arcot an experimental plantation of Casuarinas, extending to upwards of 300 acres, has been formed. It is anticipated that this wood, from its rapid growth, will be found most suitable for Railway fuel ; and the Acting Conservator should now consider and report upon the expediency of forming similar plantations in other appropriate localities.

6. The demarcation of forest reserves has received attention during the year. In the Salem District a temporary establishment has been entertained for this purpose, and in the Wynaad, boundary stones have been put up, and a forest chart prepared by Lieutenant Fullerton.

7. The Acting Conservator's negotiations for again leasing, on behalf of Government, the extensive teak forests belonging to the Colungode Nambiddy have been successful. A new lease on more favorable terms than the last has been concluded for a term of ninety-nine years.

8. The proposal to establish an Elephant breeding establishment has been negatived by the Government of India in their Under Secretary's letter, under date 4th April 1868, No. 1,661, and from the information obtained since the original proposal was made, there seems fair reason to doubt whether this measure would have proved successful.

9. Smuggling appears to have been less general in the year under report than in previous years, and is on the decrease everywhere, except perhaps in Madura and in the Tripatore Range of the Salem District, where it is still reported to be prevalent. No difficulty seems to have been experienced in obtaining convictions, when the Department have deemed it advisable to prosecute offenders.

10. The Government regret to learn that, notwithstanding the adoption of special measures and much liberal outlay for securing their destruction, man-eating tigers are found to be still infesting the Nullamullay range of hills in Kurnool. The Collector of the District will now be called to report, through the Board of Revenue, how many persons have been killed by tigers since Major Chrystie's party to the Nundycuduma Ghaut was broken up, and whether any steps are being taken for the destruction of these animals.

11. The Collector of Coimbatore will be directed, through the Board of Revenue, to give immediate attention to the settlement of the claim which has been set up to the land at the foot of the timber slip in the Polachy Talook.

12. The Acting Conservator is requested to address Government separately on the subject of the Forest Act, the Contract Law, the No Advance system, and on the other points raised by him in his report, in regard to which any orders are needed.

(True Extract.)

(Signed) R. A. DALYELL,

Acting Secretary to Government.

REPORT

OF THE

CONSERVATOR OF FORESTS,

FOR THE

OFFICIAL YEAR

1870-71.

MADRAS:
PRINTED BY H. MORGAN, AT THE FORT ST. GEORGE GAZETTE PRESS.

1871.

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D. Kurnool Forest Report.
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F. Salem Forest Report.
G. South Arcot Forest Report.
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J. South Canara Forest Report.
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L. Nellumbur Forest Report.

OFFICE OF CONSERVATOR OF FORESTS,
CAMP AT OOTACAMUND, 1*st June* 1871.

From

MAJOR R. H. BEDDOME,

Conservator of Forests,

To

D. F. CARMICHAEL, ESQ.,

Acting Secretary to Government, Revenue Department,

Fort Saint George.

SIR,—I have the honour to forward the annual report of my department for the year 1870-71.

2. I will proceed to treat upon the administration under the following Sections:—

SECTION I.—Inspection tours of the Conservator.
SECTION II.—Reserves.
A.—Reserved forests and contemplated operations.
B.—Fuel-reserves and contemplated operations.
C.—Plantations and contemplated operations.
SECTION III.—License and Voucher forests.
SECTION IV.—Yield of forests.
SECTION V.—Financial results.
SECTION VI.—General remarks.

SECTION I.—*Inspection tours of the Conservator.*

(1). During a part of April and May the Conservator was in attendance as a witness in Mr. Turnbull's trial at Tellicherry.

(2). In July he was employed on an inspection tour in the Anamallay range, and at the end of that month he proceeded to Bangalore for a consultation on forest-matters with the Mysore Conservator.

(3). In August he inspected the Trichinopoly and Tanjore Districts with reference to railway fuel-arrangements, and towards the latter end of the same month he proceeded to the Madura District, and inspected the forests, depôts, and plantations in this range; and on the 8th of September passed on into Tinnevelly, where he inspected the forests and establishments. On the 20th of September, with the special sanction of Government, he passed over to Ceylon, and spent nearly a month in visiting the forests and Botanical Gardens of the Island, chiefly with a view to the collection of material and information for the *Flora Sylvatica*. On the 22nd of October he relanded at Beypore. In November the South Canara Forest Establishment was inspected, and the timber depôts at Beypore and Calicut, and the fuel-reserves at Palghat.

(4). In December the plantations, fuel-reserves, and Office Establishments in the districts of Salem, North Arcot, Cuddapah, and Bellary, were inspected.

(5). In January the Bolumputty and Palghat forests and establishments and the Nellumbur "Conolly" Teak plantations and the reserved forests in their vicinity were inspected.

(6.) In February the Conservator went on a tour with Colonel Morgan through the forests and plantations of the Mudumallay, Seegoor, and Suttiamungalum Districts; and in March he was employed till nearly the end of the month in inspecting the work of the Anamallay range and in exploring a portion of the forests.

SECTION II.—*Reserves.*

A.—RESERVED FORESTS.

4. These have not been extended since the last report, and I have nothing further to report this year with reference to their capabilities, demarcation, etc.

5. KURNOOL.—*The Nallaymallay Reserve.*—The reserved forests in this district received much attention from the establishment, and many thousands of creepers, etc., were cut and cleared from the trees. It was not found expedient to work this tract to the extent proposed, as there was a doubt about a market. If the canal-works prove a success there will be a large demand upon these forests.

6. ANAMALLAYS. *Reserved Teak-forests.*—These have been most admirably worked during the year by Mr. Douglas. The Conservator himself several times superintended operations. Mr. Douglas's report fully explains the cause of a deficit against the forest. Teak and Rosewood to the value of Rs. 46,185-1-7, handed over during the year (chiefly to the Bombay Marine), was not paid for up to the close of the year, so that the amount cannot appear in this year's accounts. This sum more than covers the deficit.

363 Teak and 2 Rosewood trees were felled in the leased tract, and the stump-fee, amounting to Rs. 2,190, was written off against the advance granted to the Nambiddy. 10 Teak trees were felled in the Government forest proper, and the total yield was 35,255 cubic feet of Teak in 2,272 planks and crooks and 26 Rosewood planks.

2,507 Teak and Rosewood planks were dragged into forest depôts chiefly by Government elephants, but partly by hired elephants at a cost of Rs. 322-8-0.

2,184 planks were carted from the forest depôts to the head of ghaut partly by Government carts, but chiefly by contractors at a cost of Rs. 3,101-14-0. 749 planks were carted from the forests to the railway stations at Palghat and Coimbatore. Captain Gosling, the late Superintendent of this range, was strongly in favour of rail carriage against floating; Mr. Douglas is in favour of floating. The Conservator has lately gone thoroughly into the question, and there can be no doubt that floating is the best method, and it will again be introduced; but rail carriage will be partly resorted to during the ensuing year.

7. *Contemplated operations.*—Every effort will be made to get out the large stock of Teak from the forests, and as much as possible will be slipped and carted partly to the Mangara floating station and partly to Palghat railway station.

There will be no felling of Teak. 10,000 cubic feet of Rosewood will be felled to meet indents from the Bombay and Madras Gun Carriage Manufactories.

8. BOLUMPUTTY RANGE. *Sholay Karray Reserve.*—This was worked to a very limited extent. Mr. Douglas's report gives a full detail of operations.

9. *Contemplated operations.*—1,000 Teak sleepers will be felled during the ensuing year to meet an indent from the railway.

10. *Chenat Nair.*—Operations none.

11. MUDUMALLAY. *Reserved Teak-forest.*—This was worked by Colonel Morgan. Owing to the stoppage of public works on the Nilgiris, indents for timber were stopped, and the forest shows a deficit. Colonel Morgan's report gives a full detail of operations. Owing to the little demand felling was very limited, and only 3,154¼ cubic feet of Teak and Vengay were felled.

12. *Contemplated operations.*—No felling, or limited to a few trees which may be necessary on conservancy principles.

50,000 cubic feet of Teak to be carted from the forests to Mysore (for the railway).

20,000 cubic feet to be carted to Ootacamund.

13. SOUTH CANARA. *Ghaut-forests and Sooleay Teak-forests.*—Mr. Winter was compelled to leave the range owing to illness, and he was subsequently transferred to Wynaad. Mr. Cherry assumed charge of the range on the 10th of December; his report gives particulars of operations.

841½ Candies of timber and 21,500 bamboos were felled departmentally at a cost of Rs. 768-1-0 for felling and Rs. 1,890-6-0 for dragging to depôt.

1,040 Candies of timber and 20,000 bamboos were floated at a cost of Rs. 4,572-12-6.

(i.)—The Cardamoms of the reserved forests were leased out for the year by the Collector, and proceeds credited to forests.

(ii.)—The Sandalwood stills erected in the ghaut-forests paid Rs. 9,075-0-6 as a seigniorage on firewood.

14. *Contemplated operations.*—It is proposed to establish a large timber yard at Mangalore, and extend departmental felling.

15. WYNAAD. *Wynaad Teak-belt.*—Mr. Cherry worked these forests up to December when he was transferred to South Canara, and an Overseer was placed in charge under Colonel Morgan. Just at the end of the year Mr. Winter was nominated to this range; his report is necessarily rather meagre.

10,234 cubic feet of Teak were felled.

13,050 cubic feet of Teak were carted from Koorcheat forest to the Goondry depôt.

9,521 cubic feet were floated from Goondry to Hirnandy depôt.

12,789 cubic feet were carted from Hirnandy into Mysore.

16. A timber yard was established in Mysore (*vide* G. O., No. 19, of 5th January 1871), and at the close of the year a large quantity of Teak was put up to auction, but all the merchants refused to bid, stating that the Mysore Government had placed a tax of Rs. 3 upon every Madras log sold in Mysore. No official notice of this has been sent to Colonel Morgan or to the Conservator, and it can hardly be the case, as the Governor-General took off a similar tax instituted by

the same Government several years ago at the instigation of Major Hunter (then Conservator). The tax would, moreover, be very unfair, as this Government puts no tax on the Mysore timber or Sandalwood entering its territory; if the tax has really been imposed a separate report will be submitted.

17. The forest shows a deficit which was caused by the stoppage of sales in Mysore.

18. *Contemplated operations.*—5,000 cubic feet of Teak to be felled.
1,000 ,, ,, of Blackwood.

19. *Nellumbur leased forest.*—In these tracts 250 logs of Teak and 500 logs of jungle-wood were felled; 200 Teak logs and 400 jungle-wood logs dragged to depôts; 1,277 logs and 6,250 bamboos floated to Calicut.

20. *Contemplated operations.*—To fell and convey to depôt 1,200 logs of different timbers.

B.—Fuel Reserves.

21. Very much has been done during the year in reserving sufficient jungle to enable the department to ensure a permanent supply of locomotive fuel for the railways in the Presidency. The Conservator had hoped to publish maps of each railway district in this report, showing the extent and situation of the *reserves.* However, it must now be delayed till next year's report, as none of the arrangements are quite complete; the land has been selected in every district, but the proposals are in most cases before Government, and the arrangements not yet sanctioned.

22. Cuddapah. *Balapilly Railway Fuel-reserve No. I.*—This was mentioned in paragraph 31 of the Conservator's report for last year. It contains 600 acres, and is all fenced in; planting both in pits and trenches was carried on during the year.

23. The following tracts of jungle have been selected as reserves during the year, but as the handing over of the tracts is not yet complete, the Conservator's special report upon railway fuel-arrangements in this district has not yet been laid before Government:—

(1.) *Balapilly Railway Fuel-reserve No. II.*—This is a tract of 5 square-miles near Balapilly on the opposite side of the line to No. I. A large portion of the jungle had been given over to one Kistnamah Naidoo on cowle, and the Collector has agreed to give him a compensation of Rs. 692-4-0; arrangements are not yet finally settled, and the department has not up to date taken over the tract.

(2.) *Sullakuntah Charru Railway Fuel-reserve No. III.*—This is a tract of jungle measuring 1,433 acres about 5 miles to the north-east of the Codoor railway station; it has been regularly handed over by the Revenue authorities, and is being fenced in. Nurseries have been formed.

(3.) *Yerraguntlah Cottah Railway Fuel-reserve No. IV.*—A tract of jungle measuring 1,006 acres selected and marked out as a reserve, but not yet handed over by the Revenue authorities.

(4.) *Gathalla Railway Fuel-reserve No. V.*—A tract of jungle measuring 2,200 acres selected and marked out, but not yet handed over by the Revenue authorities.

24. *Expenditure on Fuel-reserves.*—The expenditure for the year has been Rs. 168.

25. *Contemplated operations.*—The tracts when handed over will be fenced in. Nurseries will be made in each reserve. Sowing tree-seed in pits and trenches and planting out seedlings into pits and trenches, etc., (thereby filling up all gaps in the jungle,) are the contemplated operations. The removal of worthless scrub and under-growth will also receive attention.

26. NORTH ARCOT.—Two large tracts of jungle have been selected for fuel-reserves by the Assistant Conservator and the Assistant Collector as follows :—

(1) *Amboor Railway Fuel-reserve No. I.*—Six square-miles of jungle of average growth, but requiring several years rest and much planting up.

(2) *Mamundoor Railway Fuel-reserve No. II.*—A tract of 4 square-miles of average jungle, requiring rest and attention.

27. A special report upon these arrangements is before Government. When the handing over is completed, the department will have 10 square-miles of jungle reserved for railway fuel in this district, besides about 1,000 acres of plantations. After these tracts have been for five or six years under conservancy and operations can be brought into play, it is calculated that this will suffice for a permanent fuel-supply to the locomotives. In the meantime, however, the arrangements are most unsatisfactory: a great portion of the woodland, within an available radius of the lines of railway, is under the Revenue authorities; there is no double check in the arrangements ; and a constant change in Collectors and their Assistants must prevent anything like system, and can only result in a great loss to Government. Smuggling is reported as most rife (*vide* remarks under the head of License and Voucher Forests of this district, paragraph 112).

28. SOUTH ARCOT. *Gingee Fuel-reserves No. I.*—In the Gingee Division, as mentioned in the Conservator's report for last year, an area of about 11,500 acres has been reserved to meet railway and other fuel-requirements. This tract so dovetails with jungles under the Revenue authorities that conservancy and suppression of smuggling will be very difficult unless the department take over all the jungles.

In this reserve nurseries are being formed and seed of a quantity of different trees has been collected.

Chinnasomadrum Fuel-reserve No. II.—A local fuel-reserve of about 8,000 acres has been formed near Chengam. At the Collector's request it is kept up and maintained by the Forest Department, but the proceeds are to be credited to Local Funds; this arrangement can scarcely be continued.

Muthenay Fuel reserve No. III.—This tract has only lately been selected ; it is situated in the Trinomallay Talook adjoining the North Arcot boundary, near Poothoopolliam.

Peringalathoor Reserve No. IV.—This has also only lately been selected ; it is in the Trinomallay Talook in the south-west portion abutting on the Kallacoorchy Talook.

29. *Contemplated operations.*—To fence in all the reserves, or at least a portion of them, and establish nurseries in each.

30. MADURA.—Some tracts of jungle have been selected in this district for railway fuel-reserves in the vicinity of the proposed line. The papers on the

subject, together with the maps, are now before Government. The following are the tracts selected :—

The Karandamallay Railway Fuel-reserve No. I.—An area of several square-miles of jungle on low hills, about 10 miles from the line and about 12 miles from the proposed station of Vanamatheray ; it is proposed to make this an open reserve.

Sirumallay Railway Fuel-reserve No. II.—A block of jungle of about 1 square-mile on the northern slopes of the Sirumallays near the villages of Adinooth and Govinooth, 6 to 8 miles from Dindigul, to be fenced in and the natural yield supplemented by planting.

Sirumallay Reserve No. III.—The Government portion of the north-western slopes of the Sirumallays, an area of several square-miles, very sparingly covered with jungle, to be formed into an open reserve and supplemented by planting.

Kuchakatty Hill Reserve No. IV.—A block of 1,000 acres of jungle on the Kuchakatty hills near Madura to be fenced in and supplemented by planting.

Alagherry Covil Reserve No. V.—A block of 1,000 acres of jungle on the Alagherry Covil Mallay near Madura to be fenced in and supplemented by planting.

31. *Contemplated operations.*—It is proposed to place the formation, fencing, and planting up of these proposed reserves under a 1st-class Overseer.

32. TRICHINOPOLY.—Three railway fuel-reserves have been selected in this district, and the papers on the subject, accompanied by maps, are before Government.

33. The following are the proposed tracts :—

The Tainmallay Railway Fuel-Reserve No. I.—A small hill covered with jungle, containing an area of nearly 1,000 acres, and situated 4 to 5 miles north of the proposed station of Manaparay (24 miles from Trichinopoly on the Dindigul line) ; it is proposed to fence this in and supplement by planting.

The Mannakaradu Railway Fuel-reserve No. II.—A tract of hill-jungle about 1,000 acres in extent near Culputty (40 miles from Trichinopoly) ; it is proposed that this should be fenced in and supplemented by planting.

The Panjantange railway Fuel-reserve No. III.—A block of hill-jungle about 1,000 acres in the same vicinity as No. II ; to be fenced in and supplemented by planting.

The fencing and planting up of these three tracts will be under the same Overseer as the Madura tracts mentioned above.

34. BOLUMPUTTY RANGE. *The Walyar Railway Fuel-reserve No. I.*—The whole of this fenced-in reserve was fire-traced at considerable expense, as fire had done much damage in previous years by retarding the growth on the east, west, and north sides. A trace of 20 yards wide was cut, and on the south side, parallel with the line, the trace was cut to 60 yards in width to avoid risk from sparks from the locomotives ; this expenditure will not again be necessary. 75,100 pits were dug and planted with various trees, but a good many casualties occurred from a long and unusual season of drought, and a species of borer did much damage. The reserve contains a good deal of natural Teak (of poor growth). 43,000 saplings were cleared of brushwood and pruned.

Expenditure for the year, Rs. 3,235-14-4.

35. *Contemplated operations.*—To plant up gaps in the reserve and assist the natural growth by the clearance of scrub, etc.

36. *The Nochupully Fuel-reserve No. II.*—This is a block of 200 acres, containing a fair supply of natural growth, situate about 6 miles from the Palghat railway station. It has only been taken up lately. 56 acres were planted with different trees, and the growth of the seedlings is promising. 67,012 pits were dug; fire tracing was also carried out. The expenditure for the year has been Rs. 750-7-4.

37. *Contemplated operations.*—To plant up gaps in the reserve and assist natural growth, etc.

38. *Pulliampilly Railway Fuel-reserve.*—This is a block of 200 acres lately taken over; it contains a small amount of natural growth, and is situated 9 miles from the station of Palghat and 5 miles from the Purly station. There have been no operations as yet.

39. *Contemplated operations.*—To plant up the whole block with fuel-yielding trees.

40. SALEM.—The fenced-in fuel-reserves A., B., C., D., and E., were fire-traced, but fire got into the A. and B. reserves, and did a certain amount of damage.

The expenditure for the year on these tracts was Rs. 1,064-10-6.

41. Four other tracts of jungle have been selected as reserves by Mr. Nisbet; they are all situate between the Ahtoor and Mullapooram railway stations, and have been handed over by the Revenue Department. Mr. Nisbet's severe illness, which has necessitated his quitting the district on sick leave for 4 months, prevented his sending in a detailed report, and the area of these tracts is not known. It is only proposed to treat these blocks as open reserves, and grazing to certain extent will be allowed. Mr. Nisbet had also selected several other blocks, but he had not gone round them with the Revenue authorities, so the fuel-arrangements in this district are not as yet finally settled.

42. C. PLANTATIONS. *Cuddapah Codoor Red Sanders plantation.*—This plantation has shown good growth during the year, the rain-fall having been favourable. The area is nearly all Red Sanders, but a few other trees, such as Sandal, Teak, Inga Saman, and five or six other sorts, have been tried on a small scale for experiment and for instruction of the establishment, etc. The area is all planted up, but there is still room for some intermediate planting.

The expenditure for the year has been Rs. 928-3-6.

43. *Contemplated operations.*—Some intermediate planting to be carried out, and if the 23 acres in extension (alluded to in the last report) can be obtained, they will be planted with Red Sanders.

44. *Operapilly plantation.*—5,609 trees of sorts were put out during the year, including 3,223 casualties replaced, of which 207 occurred during the year. The plantation promises well.

Expenditure for the year.—Plantation working charges Rs. 919-5-0.

45. *Contemplated operations.*—The whole of the area is planted up, but casualties will have to be replaced.

46. *Reddipilly Railway Fuel-plantation.*—3,101 trees were put out besides 117 casualties replaced; 920 casualties occurred. A heavy flood during the monsoon caused some damage; 150 established young trees were washed away, also five chains of fencing and a good portion of channelling.

47. *Expenditure for the year*—

	Rs.	A.	P.
Plantation Working Charges	1,066	3	11
Channelling and fencing...	2,915	8	0
Seeds	7	4	0
	3,988	15	11

48. *Contemplated operations.*—An addition of about 500 acres to the present site is to be taken in.

49. *Camalapore Railway Fuel-plantation.*—14,319 young trees were put out, and 8,562 casualties replaced, making a total of 22,881.

1,815 casualties occurred during the year. A heavy flood caused considerable damage ; 18 nursery beds were washed away and some 40 chains of fencing.

Expenditure for the year—

	Rs.	A.	P.
Plantation Working Charges	669	13	0
Channelling and fencing...	676	4	0
	1,346	1	0
Permanent Establishment...	1,370	0	0
	2,716	1	0

50. *Contemplated operations.*—Extended planting.

51. *Ghooty Railway Fuel-plantation.*—13,090 young trees were put out, and 3,401 casualties replaced, making a total of 16,491.

2,765 casualties occurred during the year.

Expenditure for the year—

	Rs.	A.	P.
Plantation Working Charges.	584	5	0
Channelling and fencing...	1,170	12	0
Permanent Establishment	336	0	0
	2,091	1	0

52. *Contemplated operations.*—Extension of planting and experiments with various sorts of trees.

53. KURNOOL. *Woncarum training and experimental plantation.*—5,082 running yards of trenching were dug and seed of the wild mango put down. 550 pits dug and Sandal plants put out. The Sandal have all died, and the mango have suffered considerably from drought and heat. At the end of the year the established plants were reported as follows, but the mango are said to be dying :—

Adenanthera pavonina (Redwood)	196
Wild mango	554

The expenditure for the year was Rs. 603-0-2.

54. *The Nallaymallay Teak Plantation.*—There has been no expenditure on this plantation during the year. The established Teak trees, 300 in number, are not healthy; they are from 3 to 5 feet in height with a girth of 4 to 5 inches.

55. *Contemplated operations.*—Plantations are not required in this range, and it is not proposed to extend them. The expenditure will be limited, and operations only such as are required for experiment and for training the establishment, etc.

56. *The Nundial Nursery.*—This is for the supply of avenue trees and trees to the ryots, etc., and is kept up from Local Funds though managed by the Forest

Department; 200 trees were issued during the year, and the total cost of the nursery was Rs. 112.

57. North Arcot. *Trivellum Casuarina Fuel-plantation, No.* 1.—This plantation which is a great success, is fully reported on by the Assistant Conservator in his report; it consists of 358 acres, and is all planted up, except 20 acres. The number of plants put out during the year were 21,144, making a total of 71,144. The expenditure for the year was Rs. 1,544-11-9, making a total expenditure since the commencement of Rs. 6,523-6-9. The oldest trees are 4 years, and average 25 feet in height, with a girth of 16 inches. The largest tree is 47 feet high, and 22 inches in girth.

58. *Contemplated operations.*—Planting up the remaining 20 acres, besides some intermediate planting.

59. *Veeringapooram Casuarina Fuel-plantation.*—The Assistant Conservator's report gives full particulars of this, which promises to be as successful as the Veeringapooram plantation. It is situate 7 miles west of Vellore and 1 mile from the railway station, after which it takes its name. Its extent is 330 acres, and the soil is sand. 15,247 trees have been put out; casualties only about 300. Expenditure up to date Rs. 751-2-6, of which amount Rs. 182-10-6 is purchase of a small portion of the land.

60. *Contemplated operations.*—Planting as much as funds will allow.

61. *Chayoor Railway Fuel-plantation.*—This is a block of 100 acres just taken up by the department; it is situate 2 miles east of the Vellore railway station, and close to the line on the south side; beyond forming nurseries, in which about 200,000 seedlings of Acacia amara and Casuarina have germinated, there have been no operations as yet.

62. *Contemplated operations.*—Planting as much as funds will allow.

63. *Tripatty Casuarina Fuel-plantation.*—This is a small block of 35 acres, but capable of extension by purchase; it is situated on the North-West Line about 2 miles from the Tripatty railway station. The soil is sand; it has only just been taken over.

64. *Contemplated operations.*—The formation of nurseries to raise Casuarina for planting in 1872.

65. *Ammerdy training and experimental plantation.*—The Assistant Conservator's report gives particulars of this small plantation. There are about 5,000 established trees, and experiments are made in planting, pruning, coppicing, etc. The expenditure for the year has been Rs. 599-4-3, making a total since the commencement of Rs. 1,975-3-4.

66. *Contemplated operations.*—43 different kinds of jungle-tree seeds have been collected for sowing, and about 24 trees of each kind will be put out where germination is successful.

67. South Arcot.—Mixed experimental plantations and Casuarina plantations are contemplated in this range, but operations have not yet commenced.

68. Madura.—*Railway Fuel-plantations.*—Government have sanctioned* the planting of tank-beds in the Tirumangalum Talook with Babul, of which there is already a considerable growth, and operations are about to be commenced.

* *Vide* G. O., No. 541, of 24th March 1871.

69. All the other railway fuel-plantations proposed for this district are in jungle, and come under the head of *Reserves* (supplemented by planting).

70. *Cumbum Valley Teak Plantation No.* 1.—One and-a-half acres of fresh ground was cleared for planting.

1,500 pits dug and planted with Teak seedlings.

Of the 2,570 Teak now established all appear healthy except 250.

The oldest plants (now eighteen months) are 11½ feet high and 5 inches in circumference.

	RS.	A.	P.
Expenditure for the year	275	8	0
Do. since commencement...	617	1	7

Pulney Hills Plantation No. II.—One half of this is Eucalyptus for building timbers, and the other half Australian acacias for firewood.

1,250 pits dug.

2,885 seedlings put out from nurseries, namely, 2,106 *Eucalyptus globulus, E. amygdalina, E. marginata*, 779 *Acacia melanoxylon, A. dealbata.* A large stock of seedlings are ready in the nursery beds.

The oldest Eucalypti are 7 to 8 feet in height and 3 inches in girth. The oldest Acacias are 6 to 25 feet in height and 6 to 18 inches in girth.

	RS.	A.	P.
Expenditure for the year...	486	13	8
,, up to date	665	0	0

71. *Contemplated operations.*—The Collector wishes to take over the plantation, and the question is before the Board and Government; considering the constant changes amongst the Revenue-officers, it would not be advisable to transfer the plantation (the Collectorate has changed hands three times during the year).

72. *Pulney Talook experimental plantation.*—This is a small plantation near the foot of the Pulney Hills on the Pulney side.

200 Teak trees were planted out and 50 casualties occurred.

The best trees are 4 to 5 feet high with a girth of 4 inches, the average growth is much smaller.

73. TRICHINOPOLY.—The planting up of tracts of padugay land on the banks of the Cauvery has received the sanction* of Government, and an Assistant Conservator has been nominated for this work and the experimental plantation on irrigated land. The Assistant has not yet joined, but operations in the way of fencing in tracts, collection of seed, and formation of nurseries have been commenced.

* *Vide* G. O., No. 502, 21st March 1871.

74. TANJORE.—Casuarina planting at Negapatam has received the sanction of Government, and operations have just commenced; they will be under the supervision of the officer nominated for Trichinopoly.

75. *Tinnevelly Railway Fuel-plantations.*—Sites have been selected by the forest officer of this range and the Revenue authorities for commencing plantations of railway fuel in the south of Tinnevelly near Palamcottah, and proposals on this head and maps are now before Government.

76. *Tank-bed plantations.*—Government have sanctioned* the planting of the tank-beds in the Satur Talook in the north of Tinnevelly, and operations commence this planting season.

* *Vide* G. O., No. 541, of 24th March 1871.

77. *Anamallay.*—The officer in charge of this range proposes to open a small Teak plantation above ghaut on the Anamallays, and a small clearing of 5 acres has been made in a favourable locality (Bamboo jungle). Want of labour and the extreme unhealthiness of the climate will be great obstacles.

78. BOLAMPATTY RANGE.—*The Sholay Karay Teak and Blackwood Plantation.*—No planting took place, but 7,000 young plants of Teak, Blackwood, and Irul (Xylia), all of spontaneous growth, were cleared round and attended to. A Teak and Blackwood nursery is to be laid down this year.

Expenditure for the year Rs. 71.

79. MUDUMALLAY. *The Mudumallay Teak Plantation.*—There are 20,000 Teak trees, six years of age, in this small plantation; the growth has been fair, but the trees have a stunted appearance as compared with Nellumbur. It is now proposed to extend planting in this locality, and there were no operations during the year.

80. *The Benni Teak Plantation.*—In this plantation there are 8,000 Teak trees, one to two years old; the two years' old plants are 8 feet high and last year's planting one foot. Large nurseries have been made, but at this elevation the seed does not germinate so regularly as at Nellumbur.

Expenditure in the Benni and Mudumallay plantations during the year, Rs. 2,801-12-8, total expenditure from commencement Rs. 5,769-7-3.

81. *Contemplated operations.*—To plant 10 acres with Teak a larger extension would be proposed but the difficulty of procuring labour is insurmountable.

82. SEEGUR AND SUTTIAMUNGALUM. *The Tallay Mallay Sandalwood Plantation.*—4,050 Sandal trees were put out at a cost of Rs. 731, which also includes the up-keep of the plantation. The total number of established Sandal trees is 34,050, and the total cost of the plantation from the commencement is Rs. 3,988-2-6.

83. *Contemplated operations.*—There are large nurseries, and if labour can be procured, 10 acres will be planted in July and August next.

84. COLLEGAL. *The Balarangam Sandalwood Plantation.*—3,000 Sandal trees have been put out. 30 acres were cleared of jungle and ploughed.

Expenditure for the year Rs. 874-10-4, and expenditure up to date Rs. 1,272-13-1.

85. *Contemplated operations.*—To plant 50 acres with Sandalwood.

Note†.—The ploughs received from the Farm at Madras only reached in November; the small ploughs were in good order, and 3 acres were at once ploughed up by bullocks. The large ploughs were incomplete, many of the nuts and screws were missing, and had to be made, so much progress in ploughing last year was not possible; this year with the first rains in June, ploughing by elephants will be commenced on a large scale.

† *Vide* G. O., No. 1,538, of 10th October 1870.

86. SALEM. *Mullapoorum Babul Railway Fuel-plantation.*—The expenditure for the year was Rs. 160-6-8, which was incurred for digging pits, putting out Babul plants and fire tracing; there are a large number of Babul seedlings from broad-cast sowing.

87. *Shervaroy Hill experimental plantation.*—The expenditure for the year was Rs. 278-13-6; a large quantity of Eucalyptus seed was put down in the nurseries. The Toon trees (Cedrela) which promised very well when first put out, have been almost all destroyed by the borer of the goat moth. The plantation is now only kept up for experimental purposes, and the expenditure will be restricted to Rs. 300 per annum.

88. SOUTH CANARA. *The Parapa Teak Plantation.*—This has not been extended during the year, and Mr. Cherry, the Assistant Conservator, reports that he does not wish to commence extended operations till he has thoroughly explored the different sites available for planting.

The expenditure for the year has been Rs. 542-14-4, which has been incurred for weeding, pruning, replacing casualties, and watching and securing from fire, etc.

89. NELLUMBUR. *The "Conolly" Teak Plantations.*—75 acres were planted out with 75,000 Teak trees at a cost of Rs. 6,883-4-0; 2,695 acres of the old plantations weeded; 625 acres of the old plantations pruned; 40 acres of new land prepared for planting; 4,075 saplings (the thinnings of different plantations) floated to depôt at Calicut.

90. *The Sappan Plantation.*—2½ acres were planted with 4,500 Sappan trees, and the growth is most satisfactory. Expenditure Rs. 50-2-0.

SECTION III.—*License and Voucher Forests.*

91. *Gumsoor and Surada.*—These tracts have been supervised during the year by Overseer MacCally; the forests have all remained under the License system.

92. *License removals.*—84,030 cubic feet of timber; 336 tons of firewood.

93. *Departmental felling.*—860 cubic feet of timber.

94. *Free felling.*—24,520 cubic feet of timber.

95. *Sales.*—Timber was sold from the depôt to the value of Rs. 322-12-0.

96. CUDDAPAH.—A separate officer was sanctioned for North Arcot in September, so Mr. Yarde was relieved from that part of his duties and able to give more attention to this district, and his time has been most fully occupied with the different reserves and plantations and in the selection of the new reserves.

97. With the exception of the Red Sanders, all the timber in this district is cut on license and voucher; the department have small depôts, but there is no demand on them, nor will there be as long as the license and voucher system is in force.

20,01,200 lbs. of Red Sanders roots and stumps were felled and brought to depôt departmentally at a cost of Rs. 6,500-9-5.

10,41,390 lbs. of Red Sanders were sold for Rs. 9,050 at the beginning of the year, the European war then shut up the market for this produce, and the anticipated sales did not take place; hence a considerable falling off in the revenue of this range.

21,11,609 lbs. of Red Sanders remain in depôt.

1,070 cubic feet of timber were sold to the railway from the depôts.

98. *Engine fuel.*—7,816 tons, 14 cwt. of firewood were supplied to the Railway Company at a seigniorage of Rs. 17,509-6-11 (*i.e.*, 1 Rupee the 1,000 lbs.). This is only about one-third the quantity supplied last year, but much is undoubtedly

smuggled from Government forests, and until the Forest Department can challenge timber under carriage when not supported by a Pass, this will continue to be the case. At present the department is quite powerless.

99. *License removals.*—1,33,240 cubic feet of timber were removed on license, realizing Rs. 14,936-7-11; 1,186½ tons of firewood, realizing Rs. 2,215-0-7; 1,254 cart-loads of bamboos, realizing Rs. 627-2-0, and 58 tons of charcoal, realizing Rs. 164-13-0.

100. *Free felling.*—By late orders from the Board Passes are supplied to the Revenue authorities, and these are issued without any limit and without any control from the Forest Department. The Assistant Conservator reports that the ryots do not avail themselves of the Passes but remove timber without obtaining them. The Tahsildar's books only show an issue of Passes for 189 bandy-loads of timber and one bandy-load of bamboos. Twenty times this amount would, according to the Assistant Conservator's calculations, be nearer the quantity that is really taken. The Conservator would not propose to restrict the felling free of seigniorage when *bonâ fide* for agricultural purposes, but unless forest-officers have more power, the system will continue to be fearfully abused, and enormous quantities will be annually cut for sale; it is a growing abuse, which has originated with the enormous demand for fuel and timber caused by railways, and instead of anything being done to check it, further encouragement is being given.

101. The receipts for licenses during the year were Rs. 14,936-7-11 for timber, 2,215 for firewood, and 627-2-0 for bamboos.

102. KURNOOL.—Mr. Sheffield was transferred to North Arcot in the month of October and Mr. Morgan assumed charge of this range.

103. *License removals.*—11,675 bandy-loads only of timber were taken out during the year against 17,546 removed last year, and the sum realized for seigniorage was Rs. 40,853-6-5; of bamboos 2,376 bandy-loads were removed, seigniorage realized Rs. 748-12-0, and of firewood 146 bandy-loads. Smuggling prevails to a great extent, and as our rules now stand, the department cannot check it; it is generally carried on at night, and the timber is conveyed to a line of carriage before the morning, and then the department cannot challenge it; but even if parties are detected in the act of felling, which cannot often be the case with the small establishments, the punishment awarded is so trifling that the practice receives no check whatever; the forest-officer himself proceeded to the forests one night and caught some parties in the act, but the punishment awarded was a fine of 1 Rupee!

104. *Free felling.*—Passes were granted for 500 loads of timber, 250 cart-loads of bamboos, and 1,950 cart-loads of firewood.

105. 1,939 cubic feet of timber (Nalla Maddi) were sold from the depôt.

106. Man-eating tigers continue to cause fearful loss of life in this range, and quite scare the wood-cutters away from some parts of the forest; this has at times considerably affected our revenue.

107. NORTH ARCOT.—A separate officer was sanctioned for this range, which was till lately under the forest-officer of the Cuddapah range, and Mr. Sheffield assumed charge in October.

The forests have remained under the license and voucher system except as regards the Red Sanders which has been worked departmentally.

108. *Departmental felling.*—2,66,666 lbs. of Red Sanders were felled and brought to depôt by the department; the war, however, stopped all sales.

109. *License removals.*—1,291 cart-loads of timber, 2,009 cart-loads of firewood, and 8,916 cart-loads of bamboos were removed on license.

110. *Free felling.*—No account was kept of the timber removed on free Passes.

111. *Engine fuel.*—1,428½ tons of fuel were supplied to the railway at a seigniorage of 1 Rupee per 1,000 lbs.

112. *Illicit felling.*—Smuggling is very ripe, the forest-officer reports that not one half of the timber cut for sale pays the Government seigniorage, the fact of large tracts of forests contiguous to our jungles, and close to the rail being under the Revenue authorities, gives a great opening for smuggling, and with a constant change amongst the Revenue-officers it is not likely that these tracts can be properly looked after, nor is there the double check that works so well in the Forest Department. The firewood sold in the Town of Vellore is said to represent a seigniorage of 3,000 Rs. per mensem, but our receipts are only Rs. 100 from this source.

113. Mr. Sheffield has raised the revenue, which is Rs. 13,948-1-6, against Rs. 8,236 for last year (with a surplus stock of timber valued at Rs. 2,333-5-4,) but it might still be more than doubled if smuggling was properly kept down.

114. *Jungle-produce.*—The Assistant Conservator's remarks on this head in his annual report are important. It appears that the department could well pay the hill-men more advantageous rates than they receive from the merchants, and still make a large profit from some of the dyes and barks. The collection of the dye-powder of the *Rottlera tinctoria* (a tree very abundant in this district and known as Kapli) is a most profitable trade; this dye has received much attention in England, and it has been urged that its collection should be undertaken departmentally to ensure a supply free of adulterations. The forest-officers of each district are collecting data upon the subject of hill-produce, and they have been ordered to consult with the Collectors of their districts* before submitting their reports. The Collector of this district is much opposed to any scheme for bringing the hill-products under the Forest Department, as he considers it will work to the detriment of the hill tribes. The Conservator wishes† to ameliorate the condition of these men, and to obtain the valuable aid of their services for the Forest Department fever-proof, as most of them are and inured to a jungle-life from their infancy, their services should certainly be secured for the forests (as they are in other parts of India and in Native States); they should be released from the trammels of the native trader, be properly clothed and looked after by the Forest Department, and be led to consider the forest-officer as their "Ma-bap."

* *Vide* paragraph 11, G. O., No. 681 of 17th April 1871.

† *Vide* paragraph 196 of the Conservator's last Annual Report.

115. *Contemplated operations.*—It is proposed to establish several large depôts, and gradually bring the felling of all reserved or superior timbers under departmental management, and issue licenses only for the more perishable timbers, firewood, bamboos, etc.

116. SOUTH ARCOT.—A separate officer was sanctioned for this range, and Mr. Woolridge was placed in charge after having been trained in the Cuddapah forests and plantations.

(1.) Conservancy has received little attention as yet, but a rail-road is entering the district, and the question becomes one of great importance.

(2.) Fuel-reserves* have been marked out, but they have not as yet been fenced in, nor have establishments been sanctioned.

* See under head of Fuel-reserves in this report, paragraph 28.

(3.) The forests are chiefly under the license system which had better remain in force until the establishment is properly organized. Some of the reserved timbers are, however, already being worked departmentally.

(4.) Much jungle dovetailing with tracts under this department still remains under the Revenue authorities; this must be rectified before conservancy can be placed on a satisfactory footing. An office-building and an increase to the establishment is absolutely necessary, and a small establishment of departmental carts and bullocks will be required.

117. *Departmental felling and sales.*—1,403 cubic feet of timber were felled departmentally, and stored in depôt at a cost of Rs. 572-2-2.

118. Sales from depôt realized Rs. 511-14-11, and there is a surplus stock valued at Rs. 544-15-5.

119. *License removals.*—16,512 cubic feet of timber; 96¾ tons of firewood; 917 bandy-loads of bamboos; 34½ bandy-loads of charcoal.

120. *Free felling.*—6,400 cubic feet of timber; 195 tons of firewood†; 193 bandy-loads of bamboos.

121. *Confiscations.*—Rs. 130-10-6 of which Rs. 89-2-0 were credited to Government.

122. *Madura.*—These forests were worked by Lieutenant Walker during the year.

(1.) Departmental felling is being largely introduced into most tracts, but a further organization of the establishment is necessary before it can completely supersede the license system.

(2.) The entry of the railway into this district makes the strict conservancy of the forests an imperative duty.

123. *Departmental felling and transport.*—9,704 cubic feet of timber felled and stored in depôt during the year; 4,209 cubic feet carted from Cumbum to the Periakolum depôt; 376 cubic feet carted from Periakolum to Madura.

124. *License removals.*—780 cubic feet reserved, and 12,692 cubic feet unreserved timber, total 13,472 cubic feet; 3,344½ tons, of firewood; 1,431 bandy-loads, and 7,952 head-loads of bamboos; 89 bandy-loads, and 1,613 head-loads of charcoal.

125. *Free felling.*—37,246 cubic feet of timber, and 12,340 tons of firewood (taken by the bandy-loads).

Note.—The amount taken out by head-loads is calculated by the Deputy-Conservator at ten times this amount!

Nine bandy-loads and 1,745 head-loads of bamboos.

† Head-loads are removed without Pass, and no record has been kept.

126. Owing to the new system ordered by the Board of Revenue by which village-officers issue licenses for free felling without any limitation or control, the Deputy-Conservator reports that the free felling has increased fourfold during the year, and that it is now absolutely in excess of the annual reproduction of the forest. It will also be seen that it is three times as much as the removal on license. Such a state of things must entirely denude the forests of this district in a few short years. It is feared, however, that it is much the same in all other districts under the present system of Jungle Conservancy without any supervision, and free felling, without any limitation or control only, it is not always shown by the returns as felling and removal goes on without any application for Passes.

127. *Sales.*—3,815 cubic feet of timber were sold from depôt, realizing Rs. 4,296-3-8.

128. The forest-officer of this range recommended that all the timber required for Government works should be drawn from the Forest depôts, and in this he was supported by the Superintending Engineer of the Circle. The G. O. No. 352, dated 4th February 1871, however, did not sanction this arrangement; the Deputy-Conservator points out that, under the present arrangement, properly seasoned timber is often not procurable, and that much inferior wood is put into public buildings, and that large profits accrue to contractors that should properly swell the receipts of the Forest Department, and that if our officers had due warning of all requirements in the way of timber for Government purposes, seasoned timber would always be forthcoming.

129. *Revenue.*—The revenue has largely increased, being Rs. 14,482-10-9 against Rs. 4,418 for last year; the forest, however, shows a deficit of Rs. 3,121-8-0, but a surplus in the stock of timber valued at Rs. 4,856-3-10. With better arrangements for checking, smuggling, etc., this district would show a very large revenue, and if the up-keep of the forests is to be properly attended to, all the proceeds must go towards this purpose for several years to come. Under the heading of *Fuel-reserves* and *Plantations* it will be seen that very much is contemplated, and if this is to be met from the forest receipts of the district, it is necessary that all the tracts now under the Revenue authorities should be transferred to this department, and that the free felling should be under some sort of supervision. A special* report upon forest conservancy in this range is before Government.

* *Vide* Conservator's letter, No. 85, dated 17th April 1871.

130. *Tinnevelly.*—A separate forest-officer was sanctioned for this range which has hitherto been under the Madura forest-officer. Mr. Hayne was nominated, and after being trained in the Madura establishment, he assumed charge in January.

131. *Zemindary forests.*—Lieutenant Walker inspected all the Zemindary forests in this range, and the Conservator accompanied him during part of his tour; his report is published in the Proceedings of the Revenue Board No. 946 of the 3rd of March, 1871.

132. Doubts have been raised as to the legal right of the Zemindars to the large tracts of hill-forest claimed by them; all the papers on the subject have been before the Government Solicitor, and are now before Government with his opinion; when this question is settled all boundary disputes must be settled; and a proper

demarcation take place, and until then conservancy cannot be placed on a really proper footing.

133. Before the advance of railways the forests of this range are becoming yearly of more importance, and with proper care they may be made to yield a splendid revenue in future years.

134. *Departmental felling.*—Though none of the forests are as yet classed under our reserves, departmental felling is introduced, and will shortly entirely supersede the license system in four of the talooks.

3,892 cubic feet were felled and stored in depôt.

964 cubic feet were sold from depôts, realizing Rs. 1,473-15-7.

135. *License removals.*—Timber, 72,973 cubic feet; firewood, 519 tons; bamboos, 177 bandy-loads and 1,355 head-loads; charcoal, 1,401½ bandy-loads and 16,559 head-loads.

136. *Free felling.*—Timber, 3,348 cubic feet; firewood, 3 tons; bamboos 12 head-loads.

NOTE.—This does not represent the real amount removed but only the Passes issued. As a rule, the people help themselves as they like without applying for Passes.

137. BOLLAMPATTY RANGE. *License removals.*—3,179 cubic feet of timber; 2,077¾ tons of firewood; 1,250 bandy-loads, 1,072 head-loads, and 29 donkey-loads of bamboos; and 9 bandy-loads of charcoal.

138. *Free felling.*—3,339¾ cubic feet of timber; 19 tons of firewood; 60½ bandy-loads and 32 head-loads of bamboos.

139. SEGOOR AND SUTTIAMUNGALUM. *License removals.*—10,580 cubic feet of timber; 900 tons of firewood; 200 cart-loads of bamboos; amount realized, Rs. 2,383-12-8.

140. *Departmental working.*—3,516½ maunds of Sandalwood felled and brought to depôt (valued at Rs. 10,549-8-0); 1,056 maunds of Sandalwood dragged by buffaloes from forests to depôt.

141. *Contemplated operations.*—2,000 maunds of Sandalwood to be felled and prepared; 10,000 cubic feet of Acha and Blackwood to be felled and brought to depôt.

142. *Bhowani.*—Operations have commenced in the Cauvery river above Erode to render it navigable for timber rafts, so that the department will be enabled to supply timber largely to the railway at Erode.

143. *License removals.*—18,040 cubic feet of timber; 700 tons of firewood; 200 cart-loads of bamboos; amount realized, Rs. 3,595-13-4.

144. *Departmental felling.*—3,357½ maunds of Sandalwood felled and brought to depôt (valued at Rs. 10,072-8-0).

145. *Contemplated operations.*—To fell and prepare 3,000 maunds of Sandalwood; to fell and float 10,000 tons of fuel for the railway.

146. COLLEGAL. *License removals.*—Timber 2,080 cubic feet; firewood 500 tons; bamboos 200 bandy-loads.

147. *Departmental felling.*—4,148¾ maunds of Sandalwood felled and brought to depôt (valued at Rs. 12,446-4-0). Colonel Morgan complains much of the want

of assistance from the Native Revenue authorities and of the impossibility of procuring any punishment for forest offences.

148. SALEM.—These forests still remain chiefly under the License system, but departmental working is carried on to a certain extent.

149. DEPARTMENTAL OPERATIONS. *Felling.*—1,653 maunds of Sandalwood were felled and stored ; 5,020 cubic feet of timber felled and stored ; 25,000 bamboos.

150. *Carting.*—219 cubic feet of timber carted from Penagara to Salem for the Jail.

Sales.—5,581 cubic feet of timber sold for Rs. 4,823-14-6 ; 25,000 bamboos sold for Rs. 567-10-11 ; 1,473 maunds 4 lbs. Sandalwood sold for Rs. 5,077-8-5.

151. *License removals.*—Timber, 20,113 cubic feet ; firewood, 3,694½ tons ; bamboos, 7,616 bandy-loads and 54,706 head-loads ; charcoal, 401 bandy-loads and 27,261 head-loads.

152. *Free felling.*—Timber, 57,423 cubic feet ; firewood, no account kept ; bamboos, 395 bandy-loads and 14,694 head-loads.

153. *Engine Fuel.*—8,841 tons which realized a seigniorage of Rs. 19,806-1-3. There is an immense amount of smuggling going on, the department not being allowed to challenge timber on a line of carriage when not covered by a Pass. It is impossible to do much towards checking it ; the district besides contains many different tracts of private forests, and the owners of these have no system of passports which adds much to the difficulty, and both Government and private forests suffer to a terrible extent from no properly organized scheme of conservancy. A *special report has been made to Government on the subject during the year.

* *Vide* G. O., No. 845 of 13th May 1871.

154. SOUTH CANARA. *License removals.*—Timber, 456 candies ; bamboos, 1,58,600 ; charcoal, 2,000 baskets.

155. A large timber depôt is about to be established at Mangalore, and it is proposed to do away with the License system entirely, except as regards firewood, bamboos, and some of the most perishable timbers.

156. *Abuse of Kumakis.*—The Assistant Conservator reports that the Kumaki system is open to much abuse, as the holders of Kumaki lands use their privileges as a cover to smuggling from surrounding Government tracts, and the latter consequently get denuded, whilst the Kumaki forests are kept intact. The present tendency, however, is to take off all departmental restrictions, and to allow Kumaki holders to dispose of their timber as they please ; this can only tend to the wholesale destruction of all Government woodland below ghauts at no very distant date. The original object of Kumaki land was to give agricultural timber leaf-manure, etc., to the agricultural population, the sale of timber was strictly prohibited.

157. *Smuggling.*—Smuggling is reported as rife everywhere in the district both on roads and rivers, and the Assistant Conservator states that he despairs of effectual conservancy unless the department can challenge timber on a line of carriage when uncovered by a Passport ; the same difficulty, however, is felt in almost every district.

SECTION IV.

YIELD OF FORESTS.

158. *Amount of timber, etc., etc., taken from the forests during the year :—*

Districts.	TIMBER.			FIREWOOD.		BAMBOOS.		Charcoal.
	Depart-mentally.	On License.	Free.	On License.	Free.	On License.	Free.	
	Cubic feet.	Cubic feet.	Cubic feet.	Tons.	Tons.	Cart-loads.	Cart-loads.	Tons.
Gumsur	860	84,030	24,520	336	No account.	.....	.....	.....
Cuddapah	.....	1,33,240	3,780	1,186½	No account.	1,254½	1	58½
Kurnool	402	2,33,500	10,000	70	970	2,396	.....	10
North Arcot ...	.....	25,810	Not known.	.....	Not known.	8,906	Not known.	466
Salem	5,020	20,113	57,423	3,694½	No account.	11,035	1,313	1,651½
South Arcot ...	1,403	16,512	6,400	96½	195	917	193	17
Madura	9,704	13,472	37,246	3,344½	*12,340	1,928	160	80
Tinnevelly	3,892	72,973	3,348	519½	8	261	1	1,217
Anamallay	22,223	.....	1,840	1½	295	1,259	638	2
Bolamputty ...	326	3,179	3,339	2,077½	19	1,322	62½	8
Nellumbur	7,500	.....	.....	.....	.....	.....	.....	.....
Wynaad	10,234	.....	.....	.....	.....	.....	.....	.....
South Canara ...	10,938	5,928	No account.	19,220	No account.	3,602	No account.	.....
Mudumallay ...	3,154½	.....	.....	.....	.....	.....	.....	.....
Seegoor	.....	10,580	.....	900	.....	200	.....	.....
Bhowani	.....	18,040	.....	700	.....	200	.....	.....
Collegal	.....	2,680	.....	500	.....	200	.....	.....
Total...	75,656½	6,40,057	1,47,896	32,647	13,822	33,480½	2,368½	2,910½

* Besides head-loads which the forest officer estimates at 10 times this amount.

Besides the above there were felled departmentally as follow :—

2,267,866 lbs. Red Sanders.

12,675 Maunds of Sandalwood.

19,085 Tons of Engine Fuel.

159. *Annual Summary of Revenue and expenditure in the different Divisions during* 1870-71.

Classification.	Central Office.	Golgondah.	Gumsur and Suradah.	Kurnool.	Cuddapah.	Bellary.	North Arcot.	Salem.	South Arcot.	Madura.	Tinnevelly.	Trichinopoly.
RECEIPTS.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
I. Sale of timber at depôts.	.....	189 3 0	.....	670 10 8	10,227 14 4	.....	.....	9,153 7 7	511 14 11	4,933 6 9	1,070 6 10	.....
Do. value of timber supplied to Department Public Works...	.....	.....	.....	.....	8 0 0	.....	.....	233 10 5	.....	.....	.....	.....
II. Sale of timber removed by purchasers ...	.....	.....	5,851 7 6	41,688 13 7	29,282 7 8	.....	13,692 1 6	38,645 6 0	2,195 13 6	4,452 4 5	17,727 6 2	.....
III. Duty on foreign timber.	.....	.....	.....	.....	.....	.....	.....	.....	.....	14 0 0	.....	.....
IV. Permit fees	.....	.....	.....	.....	.....	.....	.....	4,470 15 8	.....	.....	.....	.....
V. Grazing dues	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
VI. Sale of fruits, etc. ...	.....	.....	.....	197 6 0	.....	.....	.....	9,910 15 8	396 4 0	.....	2,109 11 9	.....
VII. Sale of confiscated timber	.....	.....	39 14 0	1,471 14 4	63 1 1	.....	174 2 0	303 15 3	89 2 0	139 10 9	303 1 6	.....
VIII. Fines and forfeitures ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
IX. Miscellaneous	.....	.....	101 10 0	893 12 11	6,720 3 2	.....	81 14 0	1,956 12 0	77 6 0	87 1 0	31 12 0	.....
Total Receipts...	.....	189 3 0	5,992 15 6	44,922 9 6	46,301 9 10	.....	13,948 1 6	64,675 2 7	3,270 8 5	9,626 6 11	21,242 6 3	.....
Conservancy and Working.												
I. Timber expenses ...	.....	.....	129 10 0	641 1 6	6,529 14 9	.....	1,054 11 0	4,176 7 0	572 2 2	7,698 8 1	4,010 0 1	.....
II. Purchases of stock and cattle	.....	.....	.....	.....	.....	.....	.....	86 1 3	.....	641 4 10	303 0 9	168 5 0
III. Feed and keep of cattle.	.....	.....	292 15 0	.....	.....	.....	.....	439 13 9	.....	.....	.....	.....
IV. Rent of leased forests...	.....	.....	.....	.....	.....	.....	.....	550 0 0	.....	.....	.....	.....
V. Charges in collecting revenue on grass, etc.	.....	.....	.....	.....	.....	.....	.....	255 2 11	.....	.....	1,515 0 4	.....
VI. Plantations	.....	.....	36 13 4	706 0 2	5,836 8 5	3,251 2 0	2,907 5 6	612 10 3	.....	883 4 10	.....	355 8 0
VII. Forest Work	.....	.....	2 0 0	162 8 0	60 0 0	.....	8 4 0	.....	.....	129 13 4	.....	.....
VIII. Forest Survey	.....	.....	.....	.....	.....	.....	.....	145 12 8	.....	10 0 0	.....	.....
IX. Experiments on timber.	.....	.....	.....	20 0 0	.....	.....	.....	.....	.....	195 2 9	.....	.....
Amount refunded ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
X. Communications and buildings	.....	.....	.....	121 10 7	408 0 0	.....	425 2 0	1,296 9 4	301 8 2	127 5 0	163 1 3	.....
Total Conservancy and Working...	.....	.....	461 6 4	1,651 4 3	12,834 7 2	3,251 2 0	4,395 6 6	7,562 9 2	873 10 4	9,685 6 10	5,991 2 5	523 13 0
Establishments.												
I. Salaries...	19,048 4 7	633 0 0	2,184 0 0	6,163 8 6	7,498 0 0	.....	3,539 0 0	7,942 14 0	2,089 12 5	7,011 11 5	8,822 1 8	.....
II. Allowances	4,204 1 5	120 0 0	360 0 0	971 9 10	900 0 0	.....	480 0 0	1,087 15 11	505 2 7	407 0 6	503 3 7	365 0 0
III. Contingencies	4,791 4 7	1 0 0	85 11 0	335 10 0	96 13 6	.....	64 0 0	240 6 2	39 7 0	500 0 0	391 15 11	.....
Total Establishments...	28,043 10 7	754 0 0	2,629 11 0	7,470 12 4	8,494 13 6	.....	4,083 0 0	9,271 4 1	2,634 6 0	7,918 11 11	9,717 5 2	365 0 0
Grand Total Expenditure...	28,043 10 7	754 0 0	3,091 1 4	9,122 0 7	21,329 4 8	3,251 2 0	8,478 6 6	16,833 13 3	3,508 0 4	17,604 2 9	15,708 7 7	888 13 0

FOREST DEPARTMENT.

Annual Summary of Revenue and Expenditure in the different Divisions during 1870-71.—(Concluded.)

Classification.	Annamalai.	Bolumputty.	Mudumalai.	Sigoor and Sattiamungalum.	Bhowany.	Collegal.	Wynaad.	Nellumboor.	South Canara.	Total as per Forest Books.	Total as per Accountant-General's Books.
RECEIPTS.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.
I. Sale of timber at depôts.	1,964 11 10	190 1 11	2,683 12 10	14,120 2 0	8,020 0 0	10,543 5 4	3,240 15 0	14,552 12 7	5,601 13 8	87,674 11 3	87,674 11 3
Do. value of timber supplied to Department Public Works...	13,955 9 6	496 4 0	12,305 15 4	6 0 0	.....	.....	.....	1,227 10 10	2,017 10 9	30,250 12 10	30,250 12 10
II. Sale of timber removed by purchasers ...	1,521 12 3	3,167 7 3	195 0 0	2,041 14 0	3,368 5 4	1,044 10 8	5 0 0	227 14 0	6,140 4 11	1,71,248 0 4	1,71,248 0 4
III. Duty on foreign timber.	.....	.....	.....	.....	32 8 0	.....	.....	.....	.....	46 8 0	46 8 0
IV. Permit fees	.....	.....	.....	.....	.....	.....	.....	.....	19,485 0 6	23,956 0 2	23,956 0 2
V. Grazing dues	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
VI. Sale of fruits, etc. ...	46 2 0	.....	.....	.....	.....	.....	.....	.....	67 0 0	12,727 7 5	12,727 7 5
VII. Sale of confiscated timber	.....	.....	.....	19 14 0	175 0 0	1 6 0	.....	.....	848 14 9	3,629 15 8	3,629 15 8
VIII. Fines and forfeitures ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
IX. Miscellaneous	28 6 0	.....	.....	201 14 8	.....	.....	.....	41 5 4	6 12 0	10,228 13 1	10,228 13 1
Total Receipts...	17,516 9 7	3,853 13 2	15,184 12 2	16,389 12 8	11,595 13 4	11,589 6 0	3,245 15 0	16,049 10 9	34,167 8 7	3,39,762 4 9	3,39,762 4 9
Conservancy and Working.											
I. Timber expenses ...	16,362 11 4	617 13 0	9,054 4 1	3,491 11 8	4,530 12 1	2,787 0 8	4,825 14 11	6,337 15 0	6,345 1 4	79,165 10 8	79,165 10 8
II. Purchases of stock and cattle	1,741 0 0	2 6 0	300 7 6	298 15 2	287 10 3	303 13 0	.....	1,107 7 0	140 12 0	5,381 2 9	5,381 2 9
III. Feed and keep of cattle.	12,569 12 3	796 12 9	5,583 3 10	318 6 6	100 0 0	693 4 7	.....	.....	1,435 0 0	22,229 4 8	22,229 4 8
IV. Rent of leased forests...	.....	.....	3,580 0 0	.....	.....	.....	.....	13 13 4	.....	4,143 13 4	4,143 13 4
V. Charges in collecting revenue on grass, etc.	.....	.....	.....	.....	.....	.....	.....	200 11 7	17 15 4	1,988 14 2	1,988 14 2
VI. Plantations	.....	4,232 15 3	2,067 3 4	676 14 0	77 0 0	844 7 6	.....	6,351 1 10	542 14 4	29,381 12 9	29,381 12 9
VII. Forest work	227 5 0	89 12 0	.....	.....	56 11 6	19 0 0	.....	.....	.....	755 5 10	755 5 10
VIII. Forest Survey	.....	.....	.....	.....	.....	.....	.....	321 7 0	.....	477 3 8	477 3 8
IX. Experiments on timber.	.....	.....	.....	.....	.....	.....	.....	.....	.....	215 2 9	215 2 9
Amount refunded ...	.....	.....	271 7 6	.....	.....	.....	.....	.....	19 14 7	291 6 1	291 6 1
X. Communications and buildings	6,808 2 9	722 13 8	1,133 14 5	204 1 1	586 11 11	58 4 8	162 0 0	7 11 9	221 13 4	12,748 13 11	12,748 13 11
Total Conservancy and Working...	37,708 15 4	6,462 8 8	21,990 8 8	4,990 0 5	5,638 13 9	4,705 14 5	4,987 14 11	14,340 3 6	8,723 6 11	1,56,778 10 7	1,56,778 10 7
Establishments.											
I. Salaries...	10,257 13 10	2,754 0 0	16,167 11 4	1,504 8 0	1,944 0 0	1,814 0 0	4,202 8 5	5,703 7 2	6,443 10 8	1,15,724 0 0	1,15,724 0 0
II. Allowances	.....	39 2 4	1,200 0 0	230 0 0	456 0 0	456 0 0	632 8 3	720 0 0	1,207 5 2	14,845 1 7	14,845 1 7
III. Contingencies	239 15 0	117 15 0	259 2 0	.....	7 0 0	12 0 0	93 5 0	42 8 0	194 4 8	7,512 5 10	7,512 5 10
Total Establishments...	10,497 12 10	2,911 1 4	17,626 13 4	1,734 8 0	2,407 0 0	2,282 0 0	4,928 5 8	6,465 15 2	7,845 4 6	1,38,081 7 5	1,38,081 7 5
Grand Total Expenditure...	48,206 12 2	9,373 10 0	39,617 6 0	6,724 8 5	8,045 13 9	6,987 14 5	9,916 4 7	20,806 2 8	16,568 11 5	2,94,860 2 0	2,94,860 2 0

160. The profit in the year is only Rs. 44,902, being less than half the average. Last year, however, the profits were more than double the average, which has in a measure caused the small receipts of this year; there are, however, other causes: the sudden stoppage of Public Works on the Nilgiris stopped the sales of Mudumallay Teak, from which a revenue of about Rs. 30,000 was anticipated; the war stopped the sale of Red Sanders in Cuddapah and North Arcot, from which a profit of some Rs. 20,000 or 25,000 was expected, and it was found impossible to hand over the Anamallay Teak and Rosewood to the Bombay Marine and other departments until near the end of the year, so that the sale-proceeds (about Rs. 50,000) could not be credited within the year. All these causes, however, will tend to swell the receipts in the ensuing year. The expenditure, on the other hand, has considerably increased; large sums are being spent on planting and on the up-keep of reserves, etc., and establishments are necessarily being constantly augmented; the results of all this increased expenditure cannot, of course, bear fruit for several years to come, and if the forests and plantations of this Presidency are to be placed on a proper footing, and become a permanent revenue to the State, immediate profits must not be looked for, and nearly the whole of the revenue must be spent for several years to come.

SECTION VI.—*General Remarks.*

161. The Conservator has little to add this year under this head: most subjects have been treated upon in this report under the several heads. The reorganization of the department is still under the consideration of Government, and in the meantime it is useless to again bring forward the questions of the necessity of a Forest Act, a Forest School, the baneful effects of the so-called *jungle conservancy* system, etc. They were all fully ventilated in the last report, and several special reports are now before Government.

162. *Forest-products.*—This important question is being considered by the officers of the department in consultation with the Collectors of districts, and a report will shortly be submitted. There can be no doubt that better arrangements can be made by which both the department and the jungle-tribes will be considerable gainers.

163. *Transmission of seeds.*—During the year large quantities of seed of the trees and plants of our forests have been forwarded to different parts of the world and to Botanical Gardens in India; the Conservator has also received valuable consignments of seed from Australia, Ceylon, and other parts, which have been distributed to the Madras, Bangalore, and Nilgiri public gardens.

164. *Herbarium collections.*—The Conservator has collected and dried plants largely during his tours, and a considerable number of specimens have been forwarded to the Museum Herbarium at Madras and to the Ceylon Herbarium, etc.

165. *Botanical publications.*—The Conservator has given up the whole of his time and attention beyond office-hours to the preparation of the "Flora Sylvatica;" the work is now half completed, Part XII. being in the press. The greatest care has been taken with the drawings and analysis, all being made from living specimens where possible.

I have the honour to be,
Sir,
Your most obedient servant,
R. H. BEDDOME, Major,
Conservator of Forests.

FOREST DEPARTMENT.

Annual account of Forest Revenue for the year 1870-71.

	Rs.	A.	P.
Receipts	3,39,762	4	9
Expenditure	2,94,860	2	0
Balance in favour of Government...	44,902	2	9
Add difference between the assets and liabilities at the commencement and close of the year	24,437	5	3
Net Revenue...	69,339	8	0

Detail of difference between assets and liabilities at the commencement and close of the year.

Forest Ranges.	At the commencement of the year.			At the close of the year.			Difference						Remarks.
							In favour of the year.			Against the year.			
Value of Timber and other Stock.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	
Golgondah	.....			.....			.....			.....			
Gumsur and Suradah	1 293	12	0	1,141	0	0	.....			152	12	0	
Kurnool	1,806	5	8	1,514	3	0	.....			292	2	8	
Cuddapah	18,420	1	6	22,534	5	9	4,114	4	3	.....			
North Arcot	380	13	4	2,333	5	4	1,952	8	0	.....			
Salem	4,004	7	9	2,727	4	6	.....			1,277	3	3	The value of the entire stock of timber entered in the accounts of the North Arcot Forest at the commencement of the official year 1870-71 has been written off to "Profit and Loss," agreeably to G. O. dated 30th June 1871, No. 1,138.
South Arcot	27	11	3	572	10	8	544	15	5	.....			
Madura	3,306	11	2	9,708	8	11	6,401	13	9	.....			
Tinnevelly	353	0	7	4,745	2	1	4,392	1	6	.....			
Annamallai	1,16,356	9	8	1,37,656	0	2	21,299	6	6	.....			
Bolumputty and Chenat Nair	5,712	10	10	5,026	4	9	.....			686	6	1	
Mudumallai	1,46,502	8	0	1,40,524	2	0	.....			5,978	6	0	
Seegur and Sattiamungalum	17,141	6	9	13,715	14	9	.....			3,425	8	0	
Bhowany	427	8	0	2,500	0	0	2,072	8	0	.....			
Collegal	7,334	3	0	9,252	7	0	1,918	4	0	.....			
Wynaad	21,144	8	3	32,350	10	10	11,206	2	7	21,893	13	5	
Nellambore	29,995	0	0	21,750	3	3	.....			8,244	12	9	
South Canara	32,053	8	0	22,646	0	0	.....			9,407	8	0	
Total Assets...	4,06,260	13	9	4,30,698	3	0	53,902	0	0	29,464	10	9	
Deduct difference in the value of the Timber between 1869-70 and 1870-71.	.....			.....			29,464	10	9	41,150	3	6	
Balance...	.....			.....			24,437	5	3	10,208	4	8	

APPENDIX A.

FOREST OFFICE,
RUSSELCONDAH, 28*th May* 1871.

From

MR. T. G. FREEMAN MACCALLY,
Overseer of Forests, Goomsoor,

To

MAJOR R. H. BEDDOME,
Conservator of Forests, Ootacamund.

SIR,—I have the honour to forward my Annual Report and Accounts for the official year 1870-71.

2. The forests under my charge have been duly visited during my tours, and every effort has been made to ensure its supervision and conservancy as far as possible.

3. All the trees of the reserved kinds above five feet girth have been reserved, and the supplies under the Voucher and License system have been, as usual, permitted within that girth.

4. During my tours to and from the Boogoodah Mootah I examined the "Koomarsun" and "Boodecoel" Hills.

5. I ascended the "Koomarsun" Hill near Jullaba, with the view of discovering if any Saul grew on it, but I was disappointed. At the base of this hill the jungles are of stunted growth, and contain the Rauno (Mimusops hexandra) in the jungles south of it, with bamboo and thorn, a few trees of the Moholo (Bassia latifolia), Damono (Grewia tiliœfolia), Bailo (Pterospurmum subcrifolium), Guova kindhu (Diospyros glutinosa), and Korunja (Pongamia glabra); the latter tree especially borders the stream higher up the hill. At an elevation of about 500 feet these trees are fewer in number, but of a promising appearance. Much long grass covers the hill, which is composed of blocks of primitive and secondary rocks; a few on its eastern summit are of a very prominent appearance; the summit of it in a north-easterly direction has a most cragged appearance. There are a few stone idols below a curved block of granite here, which is generally visited by the Hindus of Goomsoor once a year. Magnetic ore appears to exist in this hill, a small piece was discovered by me while on it. Its elevation above sea-level is 1,550 feet.

6. The Boodecoel Hill, immediately west of Boogoodah, I ascended viâ the north-western spur of it. The ascent was gradual, and in few places only very steep and trying. This spur contained no trees of any consequence, being of one to three feet girth of the unreserved kinds; but, as I ascended midway, I came upon trees of a better quality of a few of the reserved and unreserved kinds—the Doho (Conocarpus latifolius), Holondho (Nanclea cordifolia), Sahaja (Terminalia tomentosa), Bandhono (Dalbergia oojeinensis), Bailo (Pterospurmum subcrifolium), and Ebony kindhu (Diospyros melanoxylon) were to be seen with a few Sissua (Dalbergia latifolia). The dimension of the Sissua was two feet, and that of the Ebony five to six feet girth. Long grass was abundant after an elevation of about 500 feet; the plateau on the summit was small. I passed on it from north to south, when I came upon a fine forest of Saul with a few trees of four to five feet girth, and numerous saplings of smaller girth on the eastern slope, and in continuation to its southern summit, which is the highest of the whole hill; the elevation of which is 2,000 feet. From this spot I could see in the distance easterly the waters of the Chilka and the beach, or slip of land that bounds the horizon in this direction, separating these waters from the sea. I descended viâ the southern spur, and within 500 feet of descent the Saul forest ceased, and Damono and Bailo trees were to be

seen covering the slopes of a promising appearance from one to four feet girth, closely studded together; this portion may be fairly called the Damono forest. On this slope stands a perpendicular rocky ledge containing caverns, the entrance into which would be about six feet high and about four to five feet broad, but becomes smaller as one advances in them, and are divided into small apartments, and so reduced in space, that the adventurer must coop himself up to get through. A strong gaseous odour like that of sulphuric acid is emitted from it, which at times is suffocating, and is perceptible even at a distance of about 100 yards from the caverns. On my way descending I discovered two little trees resembling the Sandalwood, one of one foot eight inches, and the other eight inches girth; I trust it will prove to be the real Sandal, which will be a variety to the Goomsoor forests. The elevation where these trees are would be about 800 feet. At 100 feet lower stands three stone temples of ancient appearance, partly in a dilapidated state, on a small plateau formed by the junction of the south and western spurs of this hill. A mountain-stream, winding its course aside these, turns round the lower temple and forms a little waterfall of about fifteen feet high; at the base of this fall are three stone idols, which are constantly in a state of ablution: this stream, it is said, is perennial. From the waterfall it takes its course down the hill, and disappears into a supposed subterraneous passage, and at the distance of about two miles reappears near the village of Bansalley and falls into the Bagwanuddy river, on the left bank of which this village is situated. Although the central and upper portion of this hill contains some valuable kinds of wood of the reserved and unreserved kinds, the lower portion of it is densely covered with thorn and stunted unreserved wood. A variety of Ferns are to be seen in moist places in the plateau near the temples where the stream passes, and the Rock Fern, called by the Ooriahs "Gorodapunkee" (Drynaria quercifolia), is only visible at elevations of about 1,000 to 2,000 feet on exposed and inaccessible rocky cliffs here and on the "Koomarsun" Hill. This latter Fern in Goomsoor is an uncommon plant.

7. The jungles from the villages of Pungudy to Boogoodah, I observed, had been greatly thinned by the inhabitants of the several villages in this direction, and was obliged to warn the heads of the villages to instruct their ryots to be economical in their felling of wood for fuel, and that as the "Bharn," Satinwood, (Chloroxylon swietenia,) abounded here, some straight and promising, they should not be felled on any account whatever under pain of punishment.

8. I ascended the "Mahindrah" Hill viâ Koyepooram, which is situated north-east of Kimedy, but found no forest-trees on it foreign to the Goomsoor forests, except a few Ferns which I removed. These thrived very well till the hot winds here scorched them; they have one by one withered and died, the heat being too great for these plants during the hot season. I purposed to replenish these plants during the rainy season when an opportunity offers, when they will be transferred to cool and moist localities of any of the hills of my range.

9. From Koyepooram to the Mahindrah no Saul trees were to be seen, but on one of its spurs a few large Pia Saul trees (Pterocarpus marsupium) and Koradah (Cluytia collina) were of consequence among other trees of about four to five feet girth and about thirty to forty feet high. The Haredha (Terminalia chebula) is common on the Mahindrah of four to five feet girth and about thirty to forty feet high. Some of these trees are also of so stunted growth that the nuts or myrabolums can be removed with the hand. The Jamo (Eugenia jambolana) is also common, and are to be found in small patches in various localities on the slopes, while the greater portion of the upper Mahindrah looks arid and barren, covered only with mosses, ferns, grapes, and shrubs; of the latter two species of raspberry are to be seen in a wild state.

10. The Mahindrah has a central position, rising in a gigantic block about three quarters of a mile in length, and terminating in three elevated peaks above the parallel ranges which bound it north-west and south-west. It has a commanding appearance easterly, with several plateau in this direction below the little solitary bungalow built by the Honourable Mr. Forbes. This building is situated in the highest plateau about 200 feet below the ridge or summit of the hill. This summit is crowned by an ancient temple of gigantic blocks of stone, fitted together

without cement of any kind; aside it is the Trigonometrical station; to the north-west of the bungalow and about 100 yards from it stands another stone temple jointed by iron bars and bolts; it has a stone enclosure, and a natural spring passes through it; to the south-east of the bungalow, about a quarter of a mile distant, and about 200 feet below, in a little wood, stands another temple with an ornamental towery appearance, having three little temples aside it in a group in ruins. The bungalow overlooks easterly the second or lower plateau about 300 feet below it, where the strawberry, planted, it is said, by the Honourable Mr. Forbes, is growing luxuriantly within a small enclosure. The soil is alluvial, and in some places marly and rich loam.

11. The elevation of the Mahindrah is about 4,750 feet. On the summit or ridge of this hill there is no table-land. Its western face is a gigantic and inaccessible slope, in consequence of which a circuitous route is taken on its verges to ascend it from the Kimedy side, which appears to be the best of all the other routes to it for ascension.

12. I examined the Teak Plantation situated south-east of Purla Kimedy at a distance of two miles from it, bounded by a range of hills immediately back of it the village of Pantaputnum to its west, and the Mahindrahturnee river is about a quarter of a mile distant from it on its northern side.

13. It is 660 feet broad by 2,345 feet in length, and contains, according to my estimation, about 23,000 trees, which are all saplings from six inches to two and three feet girth. I ascertained here the method observed in planting of Teak in Kimedy.

14. No new forest has been added this year to those already noted in former reports, and strict attention has been paid to regarding their conservancy.

15. I discovered that some of the ryots with lands in the forest are generally in the habit of extending the borders of their cultivated lands, and from inquiries instituted by me, the only reply I could get from them was, that it was their puttah ground; of this I was dissatisfied, and examined their boundaries, and surveyed their lands wherever forest was concerned, and by this means discovered that in several cases there was assumption of forest-lands illegally, under the plea of *puttah ground*. I applied to the Revenue Department, and from the details of puttahs furnished me, the facts were at once proved. I was in consequence obliged to bring them to justice before the Sub-Magistrate of Goomsoor, who fined the parties, and warned them not to do so again. Of these illegal assumptions I would mention two; that of the village of Thoemtipodro, in which three ryots had four acres of puttah-ground, usurped thirty-two acres; that of Poornapamery, eight ryots having four acres of puttah-ground, had usurped fifteen acres.

16. Three ryots of the village of Gondesolo held two puttahs for 56¼ acres of land, which is called the "Ormlapully Bunjur;" they claimed about three miles of forest which they considered to be within their boundary. My interference has brought these ryots to their proper bearing, and this portion of forest has been saved from destruction. I regret to state that these 56¼ acres, which contained dense forest of the reserved and unreserved kinds of wood, had been granted to them on a progressive kowle in 1865 without the knowledge of the Forest Department, although the Revenue Board's Standing Order No. 151 had been long ago issued. This land was discovered only by the clearances which they had made during this year for the first time, and their selling of the timber of this ground to the public without the licenses of this department. On my referring to the records of the Goomsoor Tahsildar it was proved that the 56¼ acres had been given, but not to the extent of the boundary as pointed out to me, I informed the matter to the Collector, and advocated the preservation of the forests on the northern side of their cultivation, and solicited that, as thirty acres had been already cleared and brought under cultivation, the remaining 26¼ acres might be cancelled, or that the land containing forest of no consequence be granted to them on the southern side instead, reserving the northern portion under Government control. The Collector has issued orders that there should be no more felling on the ground until the land be examined and surveyed, which has been done, and the matter is still under reference, and will be settled by the Collector.

17. In this year several applications for ground had been referred by the Tahsildar of Goomsoor to this department; the localities were examined, and according to the state of the forests or jungles, the assent or dissent of this department had been given to its being granted or not for cultivation purposes.

18. Cattle-disease has been prevalent in this district during the year, one of the buffaloes attached to this department fell a victim to it mortally, and will be replaced by another from working charges.

19. My little plantation is improving, and at present contains 285 trees as noted below—

Teak trees	170
Jonesia ashoka	50
Sumach	5
Acacia Arabica (Babool)	5
Inga dulcis	50
Sapindus emarginatus	5

20. Eighty Teak seeds were sown in the Boodecoel Hill, not one germinated, and the seeds that were sown in the plantation were also a failure ; but I have succeeded with seedlings in my nursery at Russelcondah, whence, when the plants are fit for a change, they are transferred to the plantation.

21. One thousand two hundred and twenty-six bandy-loads of unreserved kinds of wood were permitted free of taxation, for the reconstruction of the houses of 155 ryots burnt during the year. This annual evil will never cease unless stringent measures are resorted to for its prevention by inducing the villagers to adopt the necessary precautionary measures.

22. Forty-three bandy-loads of reserved wood were felled and removed from the forest by this department. As there were no demands from the Department of Public Works, and the quantity of timber in depôt being ample to meet any emergency, the felling of more wood was found unnecessary.

23. 4,201½ bandy-loads of reserved and unreserved woods were felled and removed from the forests, with 821½ bandy-loads of firewood on the Voucher and License system, the seigniorage of which amounts to Rupees 5,630-5-6.

24. The Department Public Works, No. 2 Range, Burhampore, and No. 3 Range, Russelcondah, and the Assistant Engineer, Vizagapatam, to whom wood had been supplied annually, have made no requisition on this department during the year; has unfortunately resulted in the revenue being not enhanced to what it would otherwise have been.

25. Nineteen persons were prosecuted for forest-offences during the year, and sentenced by the Sub-Magistrate of Goomsoor to fines varying from Rupees 25 to 1. Of this number one was a Curnum, fined Rupees 25, Cargee, Rupees 5, and others from Rupees 5 to 1.

26. The health of myself and establishment has been good. There has been no serious attacks of fever, although one and all have suffered with it from time to time, resulting into great emaciation and prostration, of which I am at present suffering from.

I have the honour to be,

Sir,

Your most obedient servant,

(Signed) T. G. F. MacCALLY,

Overseer of Forests, Goomsoor.

APPENDIX B.

ASSISTANT CONSERVATOR'S OFFICE,
VELLORE, *1st April* 1871.

From

MR. T. SHEFFIELD,
Assistant Conservator of Forests, North Arcot,

To

MAJOR R. H. BEDDOME,
Conservator of Forests.

SIR,—I have the honour to submit the report on my forests for the year 1870-71.

When I assumed charge of the range in September last from Mr. H. H. Yarde, there were two most important questions to settle. The first was the question of Railway fuel-supply, and this was entered upon at once. I waited upon the Collector to learn what he wished to be done in the matter, and after going myself over the district and choosing what jungle and land I thought suitable, and reporting the result of my selection to the Collector, an Assistant Collector, H. Sewell, Esq., was appointed to inspect the land, &c., with me, arrange for the purchase of such of it as was puttah-land, and make the whole over to me. We were occupied in this work about a fortnight, and have measured out a block of jungle of six square miles, about six miles from the Amboor Railway Station, and a block of four square miles at Mammidur on the North-West Line, about eight miles north of Triputty Railway Station; these will form the two Railway fuel-reserves of this district. Of land for plantations about 230 acres were measured and given over to me near the Veeringapuram Railway Station, 100 acres near the Vellore Station, and about thirty-five acres near the Triputty Station; so that altogether, with plantations, we have rather more than the eleven square miles ordered by Government for this district. After finishing this business the Assistant Collector went into the long-standing dispute between the Forest Department and the Kistnapuram and Kurcumbaddy Polligars concerning their claims to certain hill-forest; a great number of documents were examined, it taking a week's hard work to get through them, yet not a particle of proof was found in any one of them; but, as I have already written to you fully on this subject, it is now necessary not to say more than that, I hope the decision will soon be given, for at present neither we nor the Polligars can cut in the disputed forests.

Quantity of Timber, &c., felled departmentally.—We have collected 266,666 lbs. of Red wood roots and stumps, but, owing to the dull state of the market, did not offer it for sale; when the market regains its normal condition, we shall advertise for tenders.

Timber, &c., removed on License.—Statement A. shows the amount of revenue, and from what sources it has been derived. It is almost double that of last year, but not yet what it ought to be, and there is no doubt it will improve yearly.

Confiscations.—Wood, bamboos, &c., to the amount of Rupees 275 have been confiscated and sold; but this is not, I am sorry to say, all the timber that has been stolen from the jungles. Our jungles are very much scattered, and our establishment too small to watch the whole, and there can be no doubt that a great quantity of wood is removed from the forests which is not paid for, probably half as much as our present revenue represent; but I am glad to report that the measures lately sanctioned by the Collector at my request are likely to put a stop to a great deal of smuggling. Hitherto we had no assistance from the village authorities, but now all are ordered to assist us, that is, they are ordered to stop all timber brought from the forests without license, and the Reddies of villages where my Peons are stationed are ordered to docket license in conjunction with the Forest Peon: this is a check over the peons that was wanted. The Collector has also given his sanction to various other measures suggested by me, and taken a great interest in all that related to forest matters.

Advances outstanding.—The outstandings are *nil*, but I have in hand a cash balance of Rupees 83 to carry to next year.

PLANTATIONS. *Trivellum Plantation.*—This plantation, situated about eight miles distant from Vellore at the junction of the Poiney and Palar rivers, and consisting of 358 acres, is all planted up, with the exception of twenty acres. The number of plants put out during the year is 21,144, making a total planted of 71,144. The expenditure for the year has been Rupees 1,544-10-9, making a total expenditure on the plantation up to date of Rupees 6,523-6-9. The oldest trees in the plantation are a little over four years, and their average height is about twenty-five feet, and girth at two feet from the ground of sixteen inches; but a great number of them are forty feet high and upwards. One tree measured forty-seven feet high and twenty-two inches in girth at one foot from the ground; this is the largest in the plantation, but the whole show a very fair growth.

Statement showing the height and girth of twelve Casuarina trees, four years old, taken at random from 18,000 *of same age in Trivellum Plantation.*

No.	Names.	The Height of tree on 1st February 1871 in feet.	Girth of tree in inches at 2 feet from ground on 1st February 1871.
		Feet.	Inches.
1	Casuarina.	40	18
2	Do.	42	20
3	Do.	42	21
4	Do.	36	22
5	Do.	38	18
6	Do.	37	20
7	Do.	40	22
8	Do.	37	22
9	Do.	47	23
10	Do.	38	16
11	Do.	39	23
12	Do.	38	19

The operations on this plantation next season will consist in planting up the twenty acres to complete the plantation, and planting between the rows of trees planted during the last two seasons, the present distance of fifteen feet plant from plant being considered too great; for this planting we have about 50,000 seedlings in the nurseries.

Veeringapuram Plantation.—This is about seven miles west of Vellore, and about one mile from the Veeringapuram Station, in the old bed of the Palar river. One hundred acres of land were taken over and fenced in with a ditch, bank, and aloe hedge in June 1870. Since then we have planted 15,247 Casuarina plants. The soil is like that of the Trivellum Plantation with water at about the same distance below the surface; but is of a finer quality, and if anything superior to the soil at Trivellum. The young plants lately planted are now three feet high, but, as the same plan was followed here as at Trivellum of planting at fifteen feet plant from plant, the ground is not much shaded and the plants require constant watering. We intend to plant between the rows to 7½ feet this season; there are now about 200,000 of seedlings in the nursery beds, which we hope will be a foot high by the time we want to plant out.

A few failures have occurred in the plantation since I submitted my last report, but only a few, not more than 200. We have been most fortunate, for the plants when put out were very small, and we fully expected one-quarter to die, but the Overseer in immediate charge, Mr. W. Newman, has paid particular attention to the plantations, visiting them constantly and unexpectedly, and kept the work-people close to their work, so we have lost very few plants. The expenditure up to date is Rupees 751-2-6, but of this amount Rupees 182-10-6 were paid for land. In January last I took over about 200 acres of waste land, and purchased thirty acres of puttah-land adjoining the above plantation, making a compact

block of about 330 acres. This will form a very fine plantation, and will, there can be no doubt, be profitable, for the work can be done so much cheaper in sand than in other soil, and the Casuarina answers so well and grows so rapidly in it, that I think it will prove the most profitable of all trees to grow for railway fuel. I have heard it said that this wood is not suited for locomotive fuel on account of the sparks it gives off in its consumption, but do not know whether it is true or not. If it should be thought advisable to extend the planting of Casuarina now or at a future time, I believe 1,000 acres of suitable land can be had between Arcot and Amboor on the banks of Palar river, and not more than four miles from the line of railway.

Chaynoor Plantation.—This is 100 acres in extent (can be extended to 200) about two miles east of Vellore Station, and close to the line on the south side. The soil is generally gravel. The land was only lately taken over, and all that has been done is to make two nurseries. It is intended to plant this land with Casuarina and "Acacia amara," and we have in the nurseries 200 beds of the above lately germinated. I cannot tell the number, but should think there cannot be less than 200,000; but to make sure of enough I have just had more seed put down. The cost of this plantation will be greater than the others on account of the different soil, this being hard gravel, the others loose sand; but if the "Acacia amara" succeeds, as there is every reason to believe it will, it growing freely on dry rocky hills in the forests, it ought to give a good return. It grows rapidly and after being felled shoots up again quickly and makes excellent coppice, which is an advantage that the Casuarina has not.

Triputty Plantation.—This is on the north-west line about two miles from the Triputty Railway Station. It is only thirty-five acres in extent, but can be extended to 200 acres by purchasing the adjoining land. The ground was only lately made over to us, and nothing has been done, nor do we intend doing more this year than raise 50,000 seedlings to plant in 1872. The soil is sand with water near the surface.

Amerdy Plantation.—This is a mixed plantation of about twenty-five acres, all planted up, situated sixteen miles from Vellore and too far from the rail to be of use as a fuel-supply. It is kept up as a training school for us all; we have many different kinds of forest-trees growing in it, and experiments are now being carried out with them, in planting, pruning, coppicing, and other matters this season. I have forty-three different kinds of jungle tree seed to put down, and intend to plant about two dozen trees of each kind to study their different growths. The expenditure this year has been Rupees 599-14-3, making a total expenditure from commencement in 1867 of Rupees 1,975-3-4.

Planting.—The distance of the plants in our plantations is fifteen feet from each other, and, as this is considered too far apart, we intend to plant between the rows. In all planting for fuel five feet, or at most six feet plant from plant will, I believe, be found the most suitable distance. The first and greatest object of a planter should be to get the ground sheltered from the sun as early as possible, and to do this he must plant as close as is consistent with the welfare of the plants and future profit. Now if trees are planted at fifteen feet they are a long time before their branches meet so as to shade the ground from a vertical sun, consequently they require watering for several seasons, for the ground around each young plant is so scorched and dried up by the heat that they would all perish if not constantly watered. Again a disadvantage of this distance is the hot dry winds of March and April sweep over the plantation, and the young plants, being too far apart to afford protection to each other, die, being fairly deprived of their sap by the hot dry winds scorching every pore; at this distance, too, there is a great waste of land, most of the ground remains unoccupied till the trees have attained nearly their full growth; and if only one tree fails, there is a large gap, but, as we must expect at least five per cent. of failures from one cause or another, we should have ten large gaps in each acre; this besides looking bad may be dangerous to the surrounding trees, as the wind may get in and cause damage; and, lastly, it pays bad to plant at this distance. No outlay is returned till the one final cutting, and then we have only 180 trees per acre to fell, and it is doubtful whether the sale of these would give a profit on the original outlay. But if we plant at five feet plant from plant instead of fifteen feet, we should have 1,742 instead of 193 plants to the acre; the plants will

if planted in soil favourable to their growth and well looked after, afford some protection to each other from the hot dry winds in the second year; after being put out they will also in that time be nearly able to cover the ground with their branches, keeping it cool and moist and in a state favourable to their rapid development, and there will be a more immediate return of money from the sale of thinnings. With Casuarina on suitable soil and judicious management three thinnings might be had in twelve years, in which three-fourths of the trees planted would be taken out, leaving, as the permanent crop, one-fourth or 400 trees at ten feet tree from tree to the acre, and these thinnings should more than repay the original cost of planting, leaving the permanent crop as profit.

In thinning out great care must be taken to avoid over-thinning; to take the worst grown plants and leave the healthiest; thin out where it is observed the plants are crowded, and leave such parts as are grown weakly, and so to regulate them as to keep them growing at a distance of about one-fourth of their height, if at a greater distance they grow too much to branches, and as the branches are small and not adapted for railway fuel, it would be a loss, and if grown at a less distance than one-fourth of their height they are starved and become mere poles. The air should be allowed to circulate freely, at the same time care being taken to keep the trees close enough to sift the wind as it were, that is, breaking its force and dispersing it; and to obtain this result the trees on the edge of the plantation should be somewhat closer than those in the body of the plantation. I think every one who has examined any large plantation must have observed that the outer trees composing it are generally more stunted and bushy in appearance than those forming the body of the plantation, and there can be no doubt this is caused by the wind; the outer belt receives its full force and disperses it for the good of their inner neighbours, they being exposed to alternate heat and cold become stunted and bushy, while the wind being diluted and tempered in passing through them arrives at the body of the plantation at a temperature more suitable for the plants. When the whole of a plantation is of equal growth, it is generally found that the plantation is protected by some surrounding object.

Sowing.—Casuarina sown in loose sandy soil sends down very long tap roots, which give us some trouble to manage. The work-people, if not carefully watched, always double up the root when planting, and where this is done the plant never thrives; nearly all the plants that have died in the Trivellum Plantation since I joined the district have died from this cause. Sometimes it is found on examination that a grub has done the mischief by having eaten clean round the stem between the bark and the wood, but usually the cause is careless planting, twisting the tap root, and preventing the sap rising freely. I tried lifting the plants, cutting the tap root back to about nine inches from the junction of root and stem, and, as the plants so treated have grown well, I intend this year to prepare all that I find with roots too long. As you are aware, we always did this with our plants on the Neilgherries, and it had the great advantage of causing a plentiful growth of lateral roots, but till I tried it here, I was in doubt whether it would answer with Casuarina. Colonel Morgan was always particular with us in having the roots of the plants carefully prepared even on the Neilgherries, how much more then is it necessary in this dry hot climate?

Method of Planting.—We have many different methods of planting, such as trenching and planting therein, trenching and sowing seed therein, pitting and planting, pitting and sowing seed therein, ploughing and broad-cast sowing, and several others. Of all these different styles, trenching and planting plants from nursery beds into the trenches at certain distance apart is no doubt the best, the plants having plenty of room for their roots to spread in two directions at least, grow much more rapidly than by any other method, but it has the great disadvantage of expense. This being too expensive a plan on any large scale, the next best method is pitting and planting into them from nursery beds. Sowing seeds in either trench or pit is, in my opinion, both more expensive and more uncertain in the result than planting.

In the nursery two men can look after, water, and protect a lakh of plants, but if this was scattered as seed over, say, ten acres in trench or pit, it would want at least twenty men to water it if the weather was dry, but even supposing the weather favourable and that the seeds germinated freely, men must still be employed to water at every lengthened break in the weather and to

keep insects and vermin of all kinds from the seedlings, or most of them would perish and cause blanks which to fill up would cost as much as planting the whole would do. Again, the plants being so small at the end of the rains, would require watering almost daily; whereas if plants of a former season were planted in those pits or trenches at the beginning of the rains, they would be firmly established in the soil at the end of the season; and if they required watering at all, it would be only occasionally; they also would be able to shade the soil and protect each other from the hot winds to a slight extent even the first season, but the seedling would give no shade, and would perish in thousands. May it not be owing in part to the above causes that so many plants have died in some of our Railway Fuel Plantations conducted on the trench system with seed instead of plants? Where it is found necessary to keep up a nursery auxiliary to the trenches for plants to replace seedlings that have died, or plant where the seed has failed to germinate, would it not be cheaper to have enough plants in that nursery to plant the whole of the land instead of sowing it? When we have jungle or other vegetable growth to protect the ground from the sun, or where the climate is naturally moist and humid, sowing in trenches no doubt answers well; but still it is more expensive than pitting; it must be more expensive to make long trenches at a certain distance apart, say six feet, than to make pits at the same distance. If an acre of the trenches are made eighteen inches deep, eighteen inches wide, and six feet apart, and the pits the same depth, square, and distance, the trenching at the same rate per cubic yard costs about five times as much as the pitting whether sown or planted. For our plantations generally, and especially for plantations on the plains in this and the adjoining districts where the sun is so hot and the rain-fall small, I think pitting and planting seedling as large and bushy as possible is the best plan and most likely to succeed.

Forest-products.—The forest-products of the district would, if collected on behalf of the Forest Department, more than pay the whole cost of establishment. The red dye from the seed of the Rotleria would of itself realize some thousands of rupees. It is at present collected by the hill-men and sold to the merchants, who go up to the jungle to buy it. When I was last month on the hills I inquired of the hill-men the price they got for the dye, and they told me that last year they got a rupee for two measures; we could afford to give a great deal more than this, and still get a good profit. The hill-men carefully prune all Rotleria trees near their villages. Great quantities of bark of different kinds are taken for tanning and dyeing; most of it is exported to Madras; and as the trees from which it is taken are destroyed, we ought to charge for it. These are bad enough losses, but where forest-products are rented out, the forest from which they are taken being under the Forest Department, and we not being credited with the amount is worse; yet this is the case—we have thousands of Tamarind trees in our forest limits, the fruit of which is rented out, and the money received by the Revenue Department; we have Palmyrah growing in our plantation land for which we paid a great price to the ryots, the toddy from which is rented out by the Revenue Department to the abkarry people, and the amount credited not to us, but to some other head. I think there can be no doubt to which department these items legitimately belong, and I am sure the Collector, to whom I have written on the subject, will order their transfer to us.

Forest Prosecutions.—The annexed Statement B. shows the result of the forest prosecutions that have taken place in this district; the Sub-Magistrates often take a long time to settle a case, but as we generally obtain convictions, I am satisfied.

Rare or new Plant discovered.—None.

Health of Establishment.—The usual amount of fever, but nothing else.

I have the honour to be,

Sir,

Your most obedient servant,

(Signed) T. SHEFFIELD,

Asst. Conservator of Forests.

Months.	Sale of confiscated Timber.	Seigniorage on Firewood.	Sale of Red Sanders.	Sale of Junglewood.	Sale of Charcoal.	Sale of Bamboos.	Sale of Valum Bark.	Total.
1870.								
	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.
April	50 0 0	128 0 0	... ...	160 0 0	36 14 0	303 5 0	20 10 0	698 13 0
May	65 5 0	109 1 0	... ...	296 7 0	42 11 0	333 1 0	23 12 0	870 5 0
June	54 1 6	51 7 0	... ...	461 0 0	17 7 0	296 10 9	16 14 0	896 14 3
July	... ...	57 1 6	... ...	247 8 0	39 12 0	442 13 0	13 2 0	800 4 6
August	... ...	87 0 0	... ...	248 0 0	24 15 0	568 2 0	8 2 0	936 3 0
September	... ...	177 11 6	... ...	136 0 0	24 12 0	440 2 0	1 4 0	779 13 6
October...	... ...	223 9 6	... ...	208 0 0	19 0 0	419 10 0	1 4 0	874 7 6
November	20 4 6	112 5 6	... ...	233 4 0	55 7 0	310 8 0	11 14 0	748 11 0
December	37 11 6	123 14 9	... ...	264 2 0	56 9 0	315 11 0	6 14 0	804 13 9
1871.								
January	4 11 6	150 9 0	84 0 0	379 4 0	20 9 0	286 11 0	9 6 0	935 2 6
February	5 3 0	208 7 0	342 0 0	260 0 0	61 0 0	355 6 0	16 14 0	1,248 14 0
March	37 3 6	3,576 13 0	... ...	281 4 0	62 0 0	380 13 0	20 10 0	4,358 11 6
Total ...	274 8 0	5,008 15 9	426 0 0	3,174 13 0	461 0 0	4,452 12 9	150 0 0	13,948 1 6

(Signed) T. SHEFFIELD,
Asst. Conservator of Forests.

B.

Statement of Forest Offences tried before the several Magistrates in the North Arcot District during the year 1870-71.

Place and Date where Offence was committed.		Offence.	No. of persons charged.	By whom tried.	Result and Punishment, if convicted.	Remarks, if any, recorded by trying Officer.	Informers.	Remarks.
Anasarooconna ...	April 1870 ...	Stealing Timber ...	3	Triputty Town Sub-Magistrate	One day's simple imprisonment each.	.. ...	Forest Peon.	
Do. ...	Do. ...	Do. ...	5	Do. ...	1st and 2nd prisoners fined 1 rupee each, 3rd, 4th, and 5th prisoners dismissed.	.....	Forest Duffadar and Peons.	
Yengothithippah ...	.....	Do. ...	11	Do. ...	2nd and 3rd prisoners sentenced to one month's rigorous imprisonment; 1st, 4th, 5th, 6th, 7th, 8th, 9th, 10th, and 11th dismissed.	.....		
Trimulla	July 1870 ...	Do. ...	3	Do. ...	Four days' simple imprisonment each.	.....	Forest Peon.	
Anasarooconna ...	Nov. „ ...	Do. ...	2	Do. ...	Dismissed	.....	Do.	
Mamundoor ...	Jan. 1871 ...	Do. ...	2	Do. ...	Do.	.....	Police Constable.	
Padavadoo... ...	Feb. „ ...	Do. ...	17	1st Class Sub-Magistrate of Poloor.	Do.	.....	Do. Inspector.	
.....	Nov. 1870 ...	Stealing Sandalwood	2	2nd Class Sub-Magistrate.	Ordered to sell the Sandalwood by public auction.	.....	Moonsiff of Padavadoo.	
Thorasawmyalum ...	17th Feb. 1871	Do. Firewood ..	4	1st Class Sub-Magistrate of Gooriattum.	1st, 2nd, and 3rd prisoners fined each, or two days' rigorous imprisonment; four dismissed for being poor.	.....	Forest Peon.	
Do. ...	Feb. 1871 ...	Assault	1	1st Class Sub-Magistrate of Vellore.	Fined 10 rupees ...	.....	Do.	

(Signed) T. SHEFFIELD, *Asst. Conservator of Forests.*

APPENDIX C.

No. 19.

ASSISTANT CONSERVATOR'S OFFICE,
CAMP CODOOR, 17*th April* 1871.

From

MR. H. H. YARDE,
Assistant Conservator of Forests, Cuddapah, &c.,

To

MAJOR R. H. BEDDOME.
Conservator of Forests.

SIR,—I have the honour to submit the Annual Administration Report of the Cuddapah Forests for the official year 1870-71, together with the usual accompaniments.

Introductory Remarks, mentioning the name of the Officer in charge.

I have continued in charge of the forests assisted by Mr. Overseer Stafford, who joined this district after the transfer of the North Arcot Forests to Mr. Sheffield in October 1870. Since then having had charge of one Range only, I have had more time to give to the improvements of the forests, and was able to spend many days at a time on the several plantations. Mr. Wooldridge, an Assistant Conservator of the South Arcot Forests, was nominated to this district for three months, with reference to G. O. No. 1,287, dated 18th August 1870; and two Overseers were sent here to be trained in planting, &c., prior to their joining their respective Ranges. Mr. Wooldridge fully acquainted himself with the nature and preparation of the accounts, and on several occasions, in company with me, visited all the plantations, except Ghooty and Camalapoor, which, he was on the point of doing, when his services were urgently required at South Arcot, and he had to leave. Overseer Appavoo Pillay and Mr. Johnston remained under my orders for over two months, and spent a few weeks on each of the plantations of this Range. The former was able to take charge of the forest duties, while I should have liked the latter to have been kept a little longer, in order to have thoroughly mastered the account branch, &c.; but, as Mr. Nisbett had no Overseer to assist him, Mr. Johnston had to leave with a very imperfect knowledge of what was required of him as an Overseer. The salaries of these Overseers had to be met from the working charges of the division, and this has, together with the operations of the plantations and formation of reserves, much increased the expenditure. Mr. W. Carroll, who was for some time employed as a temporary Clerk in this Range in connection with the Red Sander Depôt, was promoted to an Overseer in December last, and posted to the South Canara District. I was glad that Mr. Carroll had received promotion, as he always showed great willingness to work, and was a careful and pains-taking young man, and would, I think, prove a good Overseer also.

Measures taken for extending and improving the forests, &c.

Attention has been paid to the clearing of creepers from trees, which was generally executed by the Peons during their beats and whenever travelling with me. A reserve in addition to Balapully has been made at Sallakuntachavoo, a village about five miles distant north-east of the Codoor Railway Station. The block is being surrounded with a ditch and aloe fence, *i.e.*, almost on three sides of the reserve west, south-east, and north-east, while a high range of hills, belonging to the Venkatagherrydroog on the last, forms a substantial and good boundary and fence, and therefore unnecessary would be the expenditure for fencing, &c., in that direction. Nurseries have been formed thereon for the purpose of filling up gaps. At Balapully 3,229 acres, or five square miles and twenty-nine acres has been pegged out for another reserve: at Yerraguntacottah 1,006 acres; and at Gathalla and Nukanapully about 2,200 acres. In addition to these, 500

acres of waste land has been pegged out for extension of the Reddipully Plantation, besides about 400 acres on the line of railway between Rajumpett and Reddipully Stations; all these matters, owing to the objections raised by ryots in their vicinity, have obliged me to place myself in communication with the Revenue Officials; and if they are unable to negotiate for the transfer of all the waste land alluded to above, the difference will have to be made up from forest tracts elsewhere in completion of the number of square miles ordered for railway fuel purposes.

Quantity of Timber of all descriptions felled and stored in depôts.

During the year under review 2,001,200 lbs. of stumps and roots of Red Sanders has been stored in the depôts, and of this quantity 307,600 lbs. is stocked at Balapully.

Elephants and other Cattle and Carts employed in the Forests, and their Work.

Thirty-six carts were hired for removing timbers confiscated in the jungles.

Timbers of all description sold to merchants from depôts by tender or auction, and the quantity to be accounted for.

In last year's timber account there was about 3,641 cubic feet and 11¾ inches of timber, at Rupees 1-4-0, and 970 cubic feet, at Rupee 1 per cubic foot. Of the former 1,070 cubic feet and 11 inches were sold during the year to the Railway Company and private individuals, which realized Rupees 1,077-2-4 thus leaving a balance of 2,571 cubic feet and ¾ inches unsold; and of the latter none was sold. No addition has been made by felling, as I considered I had quite enough to suffice for any local demand that was likely to be made. I do not at all consider it judicious to, at any time, fell and store the timber selling at Rupee 1 per cubic foot, which causes loss by getting destroyed after a short while. About 1,041,390 lbs. of Red Sanders roots and stumps were also sold, realizing Rupees 9,050. There are still in depôts 2,111,609 lbs. for sale hereafter.

Timber, Firewood, Bamboos, &c., removed by Woodcutters on license.

As per statement supplied to the Conservator.

Engine Firewood.

17,509,431$\frac{7}{14}$ lbs. were taken by the Railway Company, which realized Rupees 17,509-6-11; but this does not exhibit the true felling in this description for the year, as a great quantity has been cut and being stored for measurement which will find a place in the account for the current official year. This has also tended towards a decrease in the revenue when compared with the previous year.

Outstanding Advances.

Amounts to Rupees 326 in the hands of my Overseers, which were advanced to them for the operations of Codoor, Ooperapully, Reddipully, and Camalapoor in Cuddapah and Ghooty Plantations in the Bellary District, *i.e.*, Rupees 160-15-6 in the Cuddapah, while Rupees 165-1-4 are against Ghooty in the Bellary District.

Timbers supplied to Public Works Department.

Four bandy-loads of Yellamah wood, valued at Rupees 8, were taken by the Public Works Department—*vide* Voucher attached from the officer of that department with the accompaniments of this report.

PLANTATIONS, *Ooperapully*.—During the year under review the whole of the channelling on this plantation had been finished; but it has to be thoroughly completed by the gaps that have occurred from the seeds not germinating, which is hoped will be completed during the coming planting season. 207 casuals occurred, 3,223 replaced, including those overlooked last season, and 2,386 plants put out from the nurseries. The latter is still kept up to supply ryots and fill up gaps as they occur even under the Bengal system. The plants are healthy in appearance.

Codoor.—This plantation requires no further eulogium, as I have reported fully upon it in my half-yearly Report on plantations in January last. Forty casuals occurred, 700 replaced, and thirty put out during the past season. The seed of Red Sanders, Albizzia speciosa, and Inga saman have been sown in channels. The last mentioned seems to have been a failure this time, and I would like to have another trial. The negotiation for the transfer of the twenty-three acres of land on the opposite bank of the river and this plantation has not yet been concluded for the extension and for further operations in the planting of Teak and Red Sanders.

Reddipully.—On this plantation 920 casuals among the plants have occurred, and 117 replaced, while 3,101 were transplanted out. The plants put out and established in previous

years are looking well. The heavy rains during the past monsoon had caused some damage to the fence and about 150 plants.

Camalapoor.—14,319 plants were put out, 1,815 casuals occurred, and 8,562 replaced. Very heavy rains came down in October last; the plantation was flooded and caused a deal of loss in the nurseries, and by the washing away of about 1,000 plants that were established. Last season the sowing in channels proved very unsatisfactory; though they germinated almost all died away on the continuance of some hot days together. The seed of Albizzia amara is being collected for the next season, as almost all other seeds were tried to no avail to any extent, since the soil does not seem to be adapted to them, which is sandy with a sub-soil of very stiff black clay. In some spots some species have a good appearance.

Ghooty.—13,090 plants were transplanted out, 3,401 casualties replaced, while 2,765 occurred. Though some plants put out and in the nurseries look fairly, yet I am sorry to have to say that I think the soil is not suited for the kinds we are experimenting in. Here also I purpose trying the Albizzia amara. A great portion of the plot of this plantation is composed of a sort of salt earth, and consequently seems unfit for any sort of vegetation intended as a source of revenue or profit.

Forest-products.—None.

Trespasses or damages committed in the Nurseries, Plantations, or Forests, and the result of Criminal Prosecutions.

Cowherds had, during the year, commenced their depredations in the jungles of Vuthaloor and Anasamudrum in the Rollamudgoo Range of Hills by hewing down saplings of the Yellamah and Red Sanders. The same has been brought to my notice by Mr. Stafford, who was unable to make a *bonâ fide* case against any particular individual, and in failure of this, it was quite useless to take any action in the matter; however, I have detached a Peon in order to detect, if possible, the cowherds when in the act of felling for such purposes, and I hope to have a few cases before the Magistracy, which may, as an example, deter others from the practice. But I fear this will be a very hazardous undertaking, as in this district it is customary that herds of cattle are annually brought during the hot season from the neighbouring district of Nellore and surrounding villages for pasturage, which remains penned up in the jungles until the rains set in. It requires the hearty co-operation of the Revenue-officers and Police to help us in bringing offenders of this kind to justice, which is the only way that we may be able to secure the forests from being so ruefully destroyed; and if the forests could be protected from this and a few other vices, in a few years the results will be attended with much success, and planting in a drought-stricken district like this may be dispensed with, as it can never be a paying undertaking. Statement A. is herewith attached exhibiting the results of criminal prosecutions during the year.

Health of Establishment.—Fever throughout the year had been very prevalent. Almost all the establishment had more or less suffered, and in several cases I had been obliged to allow the Peons (on other substitutes) to go and recover their health. I myself had sharp attacks, and my family suffered in a similar way; but I am glad to report that no deaths occurred, although the season was so adverse.

Any valuable, rare, or new plants. } None.

Summary of Operations.—In summarising the operations of this district I must allude to the revenue which has, to some extent, decreased from the Budget Estimate; this had been owing to the stock of Red Sander roots and stumps not having found a ready market arising from the war with France; besides large quantities of this kind arriving from the forests belonging to the Polligars of Kircumbaddy and the Rajahs of Calastry and Naggery. The expenditure, on the other hand, has increased from the operations conducted in planting on an extensive scale in addition to the fencing and supervision of the different Forest Reserves. Small nurseries have been kept up in each of the plantations for supplying ryots with plants, free of charges, to plant around their fields, wells, and water-courses. In no case has advantage been taken of the offer. I have introduced the system of allotting a certain patch of forest in

which the Railway Fuel Contractors are told off to fell in instead of their indiscriminately cutting as best suits their convenience to the destruction of our forests, and as soon as I find they have taken enough from that spot, another selection is made by me, while the first is allowed to rest with a view to its recovery. The fixed establishment salaries of the Ghooty Plantation in the Bellary District, as well as the working charges, are included in the financial results accounts of Cuddapah District. There is no source of revenue in the Bellary District, so that Cuddapah revenue has to go towards the disbursements at Ghooty. Free Pass Books have been supplied to all the Tahsildars for issue to ryots from time to time according to their requirements; the Revenue-officers are supposed to know their actual wants, and accordingly are expected to accommodate them. I cannot for a certainty say for what reason ryots do not seem so anxious to go and obtain the free passes intended for them as previously (while the department issued such documents). I am of opinion, consequently, that they are in the habit of procuring their necessaries from the forest without these passes. The free pass returns from the Tahsildars show a very limited quantity taken under this head when compared with previous years.

I have the honour to be,

Sir,

Your most obedient servant,

(Signed) H. H. YARDE,

Assistant Conservator of Forests.

Statement showing the Revenue of the Cuddapah Forests for the official year 1870-71.

Months.	Timber.	Firewood.	Engine Firewood.	Bamboos.	Charcoal.	Barks of woods.	Confiscated Timber.	Depôt Timber and Red Sander Roots and Stumps.	Seigniorage paid by D. P. W.	Palmyrah.	Total.
1870.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS.	RS. A. P.	RS. A. P.	RS.	RS. A. P.	RS. A. P.
April ...	1,502 12 0	159 9 7	... ...	27 10 0	17 12 0	74	... ...	9,050 0 0	...	... ...	10,831 11 7
May ...	1,949 4 8	78 0 0	2,378 0 0	70 4 0	46 11 0	113	... ...	... ...	...	... ...	4,635 3 8
June ...	1,447 0 0	105 5 9	... ...	41 8 0	13 8 0	55	1 14 0	... ...	...	8 0 0	1,672 3 9
July ...	1,514 0 0	127 8 0	700 0 0	66 10 0	11 8 0	46	... ...	... ...	...	... ...	2,465 10 0
August ...	999 0 0	210 15 0	3,324 3 2	65 8 0	... ...	30	2 8 0	... ...	...	62 8 0	4,694 10 2
September...	704 0 0	231 10 3	... ...	44 10 0	15 15 0	63	7 11 0	... ...	...	... ...	1,066 14 3
October ...	787 7 3	214 15 9	3,370 0 0	28 10 0	... ...	8	0 3 3	17 14 8	...	... ...	4,427 2 11
November...	779 0 0	468 14 9	6,152 1 1	29 0 0	26 12 0	50	4 2 0	... ...	...	... ...	7,509 13 10
December...	1,318 0 0	125 8 6	... ...	44 12 0	12 13 0	37	... ...	... ...		2 0 0	1,540 1 6
1871.											
January ...	1,122 0 0	91 4 0	... .	42 2 0	8 12 0	29	13 1 10	... ...	...	8 0 0	1,314 3 10
February ...	1,240 0 0	193 10 0	1,585 2 8	64 2 0	3 14 0	32	2 2 0	1,059 3 8	8	... ...	4,188 2 4
March ...	1,574 0 0	207 11 0	... ...	102 6 0	7 4 0	33	31 7 0	... ...	...	... ...	1,955 12 0
Total ...	14,936 7 11	2,215 0 7	17,509 6 11	627 2 0	164 13 0	570	63 1 1	10,127 2 4	8	80 8 0	46,301 9 10

(Signed) H. H. YARDE,

Asst. Conservator of Forests, Cuddapah and North Arcot.

B.

Register of the Forest Offences tried before the several Magistrates in the Cuddapah Range during the official year 1870-71.

Place where, and Date when Offences were committed.		Offences.	No. of Persons charged.	By whom tried.	Result and Punishment if convicted.	Informer.	Remarks of Forest Officer.
Sidhout	18th Oct. 1870...	Stealing Timber.	1	Sub-Magistrate of Sidhout.	10 rupees fine, or 10 days' rigorous imprisonment.	Forest Duffadar Narrainsawmy.	
Do.	20th do. ...	Do. ...	1	Do. ...	One month's rigorous imprisonment.	Forest Peon Alley Akbar.	
Budwail	1st Aug. 1870.	Do. ...	1	Sub-Magistrate of Budwail.	Ten days' rigorous imprisonment.	Revenue Official.	
Do.	14th Sept. ,,	Do. ...	1	Do. ...	8 rupees fined	Do.	
Do.	13th March 1871.	Do. ...	1	Do. ...	30 rupees fined	Forest Duffadar Narrainsawmy.	
Do.	15th do. ...	Do. ...	1	Do. ...	Confiscation.	Do.	
Royachoty ...	11th May 1870.	Do. ...	3	Sub-Magistrate of Royachoty.	Two prisoners fined 10 rupees, or seven days' rigorous imprisonment.	Village Magistrate.	
Do.	2nd Aug. ,,	Do. ...	1	Do. ...	50 rupees fined, or 7 days' rigorous imprisonment.	G. Chuppidiah.	
Do.	18th Jan. 1871.	Do. ...	1	Do. ...	1 rupee fined, or five days' rigorous imprisonment.	Village Magistrate of Chinthaguntah.	
Pullumpett ...	3rd Aug. 1870.	Do. ...	1	1st Class Sub-Magistrate of Pullumpett.	Two months' rigorous imprisonment.		
Do.	16th do.	Do. ...	1	Do. ...	Do. do.		
Do.	14th Feb. 1871.	Do. ...	4	Do. ...	2 prisoners fined 20 Rs. each. 2 Do. do. 40 ,, ,,	Veejayaragavalu.	
Do.	16th Dec. 1870.	Do. ...	3	Do. ...	15 days' rigorous imprisonment ; 1 released.	Village Magistrate.	
Do.	14th Jan. 1871.	Do. ...	1	Do. ...	15 days' rigorous imprisonment.		
Do.	6th Feb. ,,	Do. ...	2	Do. ...	25 Rs. fined to one prisoner, the other released.	Police Deputy Constable.	
Do.	Do.	Do. ...	1	Do. ...	30 rupees fined.		

(Signed) H. H. YARDE,

Asst. Conservator of Forests, Cuddapah and North Arcot.

APPENDIX D.

OFFICE OF ASST. CONSERVATOR OF FORESTS,
NUNDIAL, *1st April* 1871.

From

R. W. MORGAN, ESQ.,
Assistant Conservator of Forests, Nundial,

To

MAJOR R. H. BEDDOME,
Conservator of Forests, Ootacamund.

SIR,—I have the honour to submit the Annual Administration Report of the forests under my charge for the official year 1870-71.

2. Mr. Sheffield delivered these forests over to my charge on the 7th October last. I have inspected the whole of the forests extending from Ongole, the most southern limit of my district, up to the Veerabadra Droog on the banks of the Kistna.

3. *Description of Forest.*—The forest in the north and south is very poor; the trees are small and far apart. In the north there are a few small Teak and Nallamaddi trees, also a good many Toovki (Diospyros melanoxylon). I do not think these trees will ever grow to any size. Going southwards towards Vencatapuram larger trees are met with. Here also some very fine Vengay trees (Pterocarpus marsupium) are found. These forests are very feverish. From Vencatapuram to Mahadevapuram, a distance of forty-five miles, the forest is the best to be found in the Nallamullay Range.

4. *Forest Improvement.*—This is the second year since a reserve of about 200 square miles in extent has been formed. Many thousand creepers have been cut. These creepers grow to an immense size, and are very destructive to the trees. A small portion of forest had been felled and a few Teak plants put out by my predecessor; but they looked stunted and straggling when I last saw them. I discovered a good many Teak trees in the forest above Yelegode; but they were very crooked.

5. *Forests worked by License and Voucher.*—The whole of these forests, with the exception of the reserve, are open to the public for felling on license. Attached is a statement showing the number of loads of timber, bamboos, firewood, &c., taken.

6. *Private Forests.*—There are three principal natives here who own forest-land, or, as it is here called, "Durkhast land." The greatest of the three is a man called Atchaya. This man obtained from Government about 1,500 acres of land. Having nearly exhausted his supply of wood, he began to issue licenses at a very low rate, and quietly allowed, or rather abetted the people in cutting timber on Government land. For a long time I was unable to catch him; but one day I surprised two men in Government land with Atchaya's passes, cutting Teak and Billu (Satinwood) saplings. The case was proved, and the Tahsildar sentenced the men to a fine of Rupees 15 each, and Atchaya to a fine of double the amount. These "Durkhast lands" are a constant source of worry and annoyance to the Forest Department. They are not demarcated, and so the owners can do pretty much as they like with the Government forest adjoining their lands.

7. *Roads.*—The Yeranapaud Forest road is in a pretty fair state. But this is the hot weather when almost all roads down here are in good order. In the rains the latter part of the road is always in a very muddy state.

8. *Timber felled.*—257½ cubic feet of Teak and 12$_{1}^{1}$½ cubic feet of Nallamaddi have been felled and carted by contractors to the Nundial Depôt, and 390$_{1}^{7}$½ cubic feet of Nallamaddi have been delivered by contractors at the Cumbum Depôt. The table below shows the cost of carriage, &c:—

Description of Timber.	Trees felled and carted from Forest Depôt.		Market Rate.	Total
Nundial.	No.	Cubic feet.	Rs. A. P.	Rs. A. P.
Teak	48	232 9/12	0 14 0	203 12 2
Do.	3	24 3/12	1 0 0	24 4 0
Nallamaddi		12 1/2	1 4 0	15 10 0
Cumbum.				
Nallamaddi		390 7/12	1 4 0	488 3 8
Total ...	...	...	...	731 13 10

9. (i.) *Confiscations.*—During the year, timber, firewood, bamboos, &c., to the value of Rupees 1,399-6-10, were confiscated and sold by auction; of this sum Rupees 466-7-7 have been paid to informers and Rupees (932-15-3) credited to Government.

(ii.) In one or two instances timber was released on payment of double seigniorage.

10. Prosecutions on account of theft have not been so numerous this year as last, as will be seen by the subjoined Register of Forest Offences. Many Native Officials show an extraordinary leniency towards offenders, and seem reluctant to inflict heavy punishment.

11. *Timber sold from Depôt.*—1,939 6/12 cubic feet of Nallamaddi have been sold to the public from our depôt: but no wood has been supplied to the Department Public Works.

12. *Advances.*—None.

13. PLANTATIONS, *Woncarum.*—5,082½ running yards of trenching were executed, and seeds of the wild mango appear to have been sown in them. 550 pits were also excavated, and there were 550 Sandal plants placed in them, the whole, however, died out during the year, and the casuals were replaced by wild mango plants. The number of established plants are as follow:—

Red wood (Adenanthera Pavonina)...196.
Wild Mango (Mangifera Indica).....554.

The mango plants are dying out rapidly. This I should attribute to the excessive salt in the soil; those alive are from nine inches to two feet high and half an inch in diameter. Very poor and bad; yet there are magnificent mango trees growing here, showing it is only the surface soil which is in fault; but having to dig deep pits for mango trees would never pay: these remarks apply equally to the Sandal and Red wood in the same nursery. The expenditure incurred during the year has been Rupees 603-2-0.

Muttycondah.—Ten acres of scrub jungle were cleared for the purpose of extending the Teak planting, but as no Teak seeds were received from Mr. Ferguson, I was disappointed in my anticipations. I lately visited the Teak Plantation, and the condition of the plants, about 300 in number, appeared to be very unhealthy. They average in height from three to five feet, with a girth of from four to eight inches. No expenditure has been incurred during the year.

Nundial.—This nursery is about two acres in extent, and is supported from local funds. It was established for the purpose of supplying avenue trees. During the past year there were 200 plants issued by me; since then no further issues have been made. The following is a description of the beds, &c., in the nursery:—

Cassia fistula	beds	1
Cassia florida	do.	1
Chloroxylon swietenia	beds	1
Albizzia Lebbek	do.	3
Poinciana regia	do.	1
Bassia latifolia	do.	3

In addition to this there are—

Thespesia populnea	... 58
Millingtonia hortensis	... 19
Casuarina	... 27
Parkia biglandulosa	... 4

established in earthen pots ready for issue to the Revenue-officers. The maintenance of the year cost Rupees 112.

Contemplated Operations.—There does not seem to be any necessity for carrying out large experimental plantations. The ground already cleared is sufficient in extent for growing a few specimens of indigenous trees for the improvement or teaching of the Forest Staff. Seeds of the Terminalia tomentosa, Santalum album, Soymida febrifuga, and Chloroxylon swietenia have been collected, and will be sown in June or July next.

14. *Avenues.*—The Nundial Tahsildar has been supplied by me with many of the plants left by Mr. Sheffield. I put some seeds down, and they have come up; but I do not know how they will stand the hot weather.

15. *Tigers.*—The depredations of man-eating tigers have seriously affected the revenue this year. The transmission of the monthly accounts, too, has often been delayed owing to the Tappal Runners, from this to Cumbum, having been carried off. I have been unable to close in time this very report. Not having as yet received the revenue and other accounts from the Cumbum Tahsildar, as a man-eater carried off the Tappal Runner three days ago, and people are deserting the Nandy Canama for the Munteral Canama Ghaut road. The tiger (for there is *one* well known man-eater) appeared a short time ago near Baswapuram and killed a man. The wood-cutters at once deserted that part of the forest, and the Station Peon reports to me that they have since been clandestinely felling in the reserve. This same tiger was once the terror of the Batchipully people; but he has now deserted that part of the country, and has kept himself entirely to the Nandy Canama It is not likely that he will be destroyed until Government offers a larger reward. An attempt was made by a Native Shikarrie to shoot him. He sat up night after night on a "Muchonu," commanding the road, as the tiger was known to be in the habit of walking up and down it. Several nights he sat up and met with no success. He descended from his post one morning, as he was in the habit of doing, and as he was in the act of drinking water, the tiger suddenly sprang out from behind a bush and carried him off.

I have the honour to be,

Sir,

Your most obedient servant,

(Signed) R. W. MORGAN,

Assistant Conservator of Forests.

Register of Forest Offences tried before the several Magistrates in the Kurnool District during the official year 1870-71.

Place and Date where Offence was committed.		Offence.	No. of Persons charged.	By whom tried.	Result of Punishment, if convicted.	Informers.
Baswapuram	27th April.	Stealing timber.	3	Sub-Magistrate of Nundial.	Fined Rupees 3 each, or 4 days' imprisonment.	Boogganna.
Ralapaud	29th do.	Do.	6	Do.	Dismissed; not proved ...	Peon Guruvappa.
Lingapuram	2nd May.	Do.	1	Do.	Do.	Duffadar Pracassum.
Beeravaloo	6th do.	Do.	2	Do. of Sirwell.	Fined Rupees 3 each	Reddi and Curnum.
Vencatapuram	6th do.	Do.	1	Do. of Athmacoor.	Fined Rupees 20	Police.
Nallacalva	18th do.	Do.	1	Do.	Dismissed; but timber confiscated	Narasi Reddi.
Do.	18th do.	Do. bamboos.	1	Do.	Fined Rupees 4	Seshaya.
Royamalapuram ...	23rd do.	Do. timber.	4	Do. of Nundial.	Dismissed; not proved ...	Peon Munusawmy.
Pamalapaud	14th June.	Do.	7	Do. of Athmacoor.	Fined Rupees 7	Choudigadoo.
Anupoor	16th do	Do.	5	Do. of Nundial.	Do. Rupees 2 each	Nagi Reddi.
Mookkamulla	11th July.	Do. firewood.	1	Do. of Sirwell.	Do. Rupees 3	Reddi, Curnum, and Talayar.
Alamoor...	1st August.	Do. timber.	4	Do.	Do. Rupees 2 each	Talayar Cossim Saib.
Oopalapaud	12th do.	Do. timber and bamboos.	7	Do.	Do. Rupees 3 each	Police.
Cadamalcalva	12th Sept.	Do. bamboos.	1	Do. of Nundial.	Do. Rupees 2	Peon Mossim Saib.
Do.	14th do.	Do. timber.	2	Do.	Do. Rupees 10 each	Reddi and Curnum.
Do.	28th do.	Do.	1	Do.	Do. Rupees 10	Peon Mossim Saib.
Akkavedoo	8th Oct.	Do.	1	Do. of Cumbum.	Dismissed; not proved ...	Do. Emam Saib.
Seeta Nagalavarum ...	8th do.	Do.	1	Do.	Fined Rupees 5	Do. do.
Veerabadrapuram ...	14th do.	Do.	7	Do. of Markapur	Do. Rupees 20 each... ...	Do. Mossim Saib.
Papinanapulli	17th do.	Do.	1	Acting Head Assistant Magistrate.	Do. Rupees 25	Forest Overseer.
Timmapuram	24th Oct.	Do. bamboos and junglewood.	9	Sub-Magistrate of Nundial.	Dismissed; not proved ...	Duffadar Emam Saib.
Pogadala	24th do.	Do. timber.	1	Do. of Nandikotkur.	Fined Annas 8...	Village Talayar.
Thaticharla	3rd Nov.	Do.	1	Do. of Cumbum.	Do. Rupees 7	Do.

Register of Forest Offences tried before the several Magistrates in the Kurnool District during the official year 1870-71.

Place and Date where Offence was committed.		Offence.	No. of Persons charged.	By whom tried.	Result of Punishment, if convicted.	Informers.
Royalapalli	11th do.	Do.	5	Do. of Markapur.	Do. Rupees 2 each	Police.
Pesaravoy	12th do.	Do.	1	Do. of Nundial.	Dismissed; not proved ...	Reddi.
Athmakoor	19th do.	Do.	1	Do. of Athmacoor.	Fined Rupees 8	Sub-Magistrate of ditto.
Chagulmurry	25th do.	Do. firewood.	13	Do. of Sirwell.	Do. Rupees 5 each	Talayar and Police.
Nallacoonta	9th Dec.	Do. timber.	4	Do. of Cumbum.	Do. Rupees 5 do.	Police.
Chagulmurry	10th do.	Do. firewood.	2	Do. of Sirwell.	Do. Rupees 2 do.	Peon Kajamut.
Vankayalapalaem ...	10th do.	Do. timber.	4	Do. of Cumbum.	Do. Rupees 5 do.	Reddi.
Nundial	10th Jan.	Do.	1	Do. of Nundial.	Dismissed; not proved ...	Duffadar Dada Saib.
Do.	13th do.	Breach of Trust.	3	Do. do.	2 fined Rupees 15 each, and 1 Rupees 30.	Assistant Conservator of Forests
Do.	13th do.	Stealing timber.	1	Do. do.	Dismissed; not proved ...	Do.
Athmacoor	23rd do.	Do.	1	Do. of Athmacoor	Fined Rupees 3	Sub-Magistrate of ditto.
Chintagunta	21st Feb.	Do.	1	Do. of Nundial.	Do. Rupees 7	Subba Reddi.
Codoor	18th March.	Do.	1	Do. do.	Do. Rupees 15, or imprisonment for 7 days.	Reddi and Curnum.
Narasapuram	Feb.	Breach of Trust.	1	Deputy Magistrate of Nundial.	Fined Rupees 25 and imprisonment for 8 days.	Assistant Conservator of Forests

NUNDIAL, 1*st April* 1871.

(Signed) R. W. MORGAN,
Assistant Conservator of Forests.

Abstract of the Statement of Timber, &c., confiscated and sold in the Kurnool District during the official year 1870-71.

Description.	No. of Bandy-loads.	No. of Head-loads.	Amount realized.	Amount credited.	Amount distributed to Informers as rewards.
			RS. A. P.	RS. A. P.	RS. A. P.
Bamboos	...	...	50 1 6	33 6 4	16 11 2
Billu	...	...	18 6 8	12 4 6	6 2 2
Charcoal	...	...	14 9 6	9 11 8	4 13 10
Chiriman	...	...	73 12 6	49 3 0	24 9 6
Firewood	...	...	149 9 2	99 11 5	49 13 9
Junglewood	...	...	201 6 6	134 4 4	67 2 2
Nallamaddi...	...	...	678 1 0	452 0 8	226 0 4
Teakwood	...	...	3 2 0	2 1 4	1 0 8
Tunki	...	...	2 0 0	1 5 4	0 10 8
Yeggi	...	...	89 13 6	59 14 4	29 15 2
Naryepa	...	...	118 8 6	79 0 4	39 8 2
Total ...	...	...	1,399 6 10	932 15 3	466 7 7

NUNDIAL, 1*st April* 1871.

(Signed) R. W. MORGAN,
Assistant Conservator of Forests.

APPENDIX E.

OFFICE OF THE DY. CONSR. OF FORESTS IN CHARGE OF MADURA, TINNEVELLY, TRICHINOPOLY, AND TANJORE FORESTS,
MADURA, 10*th April* 1871.

From

LIEUTENANT C. J. WALKER,
Deputy-Conservator of Madura, &c., Forests,

To

MAJOR R. H. BEDDOME,
Conservator of Forests.

SIR,—I have the honour to submit the Administration Report of the Forests under my charge for the official year 1870-71.

I have been in charge of the division throughout the year with the exception of twenty days' privilege leave, during which time the duties were performed by Mr. Assistant Conservator Hayne.

From the 15th of April until the end of May my Circuit Office was at Peracolum, and I was employed in that talook and on the Pulney Hills (Upper), superintending planting operations, &c. In June I visited Dindigul and the Pulney Talook; from July 1st to 9th August I inspected the Establishments in the Peracolum Talook and forests of the Lower Pulneys, a detailed report of which has been submitted. From the 10th to 19th August I was at Ootacamund on duty under orders of Government, and from 20th to 25th accompanied you to Trichinopoly and Negapatam. From 25th August to 15th September I accompanied you on a tour of inspection to the forests of Peracolum Talook, Cumbum Valley, Chitur, and Shinagherry Zemindaries (in Tinnevelly), Vasudavanullur and Thengasy; and from the latter date up to 20th October was employed in the Thengasy and Umbasamudrum Talooks, inspecting establishments and inquiring into the claims of the Zemindars to the hill-forests, a full report on which has been submitted (*vide* Proceedings of Board of Revenue, No. 946, dated 3rd March 1871).

From 20th to 31st October I travelled along the proposed line of railway from Tinnevelly to Madura, and submitted proposals for the supply of railway wood-fuel, and on the 11th November availed myself of twenty days' privilege leave of absence to Madras.

Between the 7th December and 18th February I was employed in the Trichinopoly and Tanjore Districts, selecting sites for plantations and reserves; and from the latter date to 27th February in the Dindigul and Madura Talooks in like manner, full reports of which have been submitted. During March I remained at head-quarters owing to the state of my health and press of office-work at the end of the year.

I have been absent from head-quarters 308 days during the year. Mr. Hayne, Assistant Conservator of Forests, joined on 19th August 1870, and was temporarily attached to head-quarters and Nuthum Range. From that date up to 12th January, when he took charge of the Tinnevelly forests, he was absent fifty-one days from head-quarters, and has since thoroughly inspected the forests of the several talooks or Sub-Overseers' charges in the Tinnevelly District.

He has shown great assiduity in the performance of his duties, with the details of which he is now thoroughly acquainted, and I have every reason to be satisfied with his work, and to recommend him as a Forest Assistant.

Introductory Remarks, mentioning the name of the officer in charge, &c.

1. *Madura District.*—3rd-Class Overseer A. Appavoo Pillai was in charge at Peracolum up to July 1870, when he proceeded to Tinnevelly to act for the 2nd-Class Overseer Mr. Newman then under suspension. The Head Clerk of my Office, N. Soobian, acted as Overseer up to 31st November 1870,

and gave satisfaction. P. Rungiah Naidoo, Head-Quarter Overseer (4th Class) in Salem, was then promoted to 3rd Class and transferred to this district at my request.

He has scarcely had time to make himself acquainted with his range, which is extensive, but will I have no doubt do well.

I have separated the Nuthum forests from his charge, and constituted them with the fire-wood jungles of the Alagherry Covil and Munja Mullay recently transferred from the charge of the local conservancy into a separate range, comprising the forests of the Madura and Meylur Talooks and styled the Madura Range. 3rd-Class Overseer A. Appavoo (junior), one of the extra Overseers sanctioned in G. O. No. 1,258, dated 17th August 1870, was transferred from Cuddapah in November 1870 and placed in charge of this range; but on our failing to secure the services of Mr. Macintosh for Trichinopoly I transferred him there as a temporary measure, and appointed one Kolasagaru Naidoo from the Central Office as a 4th-Class Overseer on probation. He is now in charge of the Range and Head-Quarter Office, and promises to do well.

P. Rungiah remains in charge of Pereacolum and Pulney known as the Pereacolum Range, but on our commencing operations at Dindigul for the supply of railway firewood, when the jungles now under the local conservancy should be handed over to us, I would strongly recommend the formation of another range comprising the Dindigul and Pulney Talooks. The situation of the Pulney Hills renders it excessively inconvenient for the Pereacolum Overseer to visit Pulney, and the charge of the Pereacolum Talook, including the forests of the Cumbum Valley and southerly slopes of the Pulneys with the plantations at Vannathipara (Cumbum) and Kodikaud (Pulney Hills) is quite sufficient for one man who, aided by a Sub-Overseer, for the Pulney Hills, and another at Cumbum, would then be able thoroughly to conserve and work the forests, supervise planting, &c.

In this report the whole of the Madura District is treated as one range, the accounts and returns having, until quite recently, been mixed up.

Measures taken for extending, improving, or protecting the forests, &c.

2. I have not proceeded with the Forest Map alluded to in my report for 1869-70, owing, 1st, to stress of other duties, both special and of a routine nature, and, 2nd, to the impossibility of ascertaining the actual boundaries between the Government and Zemin forests.

Tracts for free-felling have been selected, and are now being demarcated in the Pereacolum and Pulney Talooks after notification in the *District Gazette* with the Collector's approval and countersignature.

The publication and demarcation of those for Meylur and Dindigul is delayed owing to an objection on the part of some villagers in the latter talook, which appears to me valid, and which I have directed the Overseer to inquire into personally and settle in communication with the Tahsildar. The Madura jungles have so recently been handed over that we have done nothing there in this way as yet.

The voucher and license system has been put a stop to for felling of timber of the reserved descriptions throughout the Pereacolum and Pulney Talooks, and Government Depôts opened at Pereacolum, Pulney, and Chuttraputty, besides agencies at Dindigul and Madura. The demand is very great, and the supply comparatively small, as we allow none but ripe trees to be felled. Except at Cumbum, where rough wrought beams are dragged from the forests, the custom has hitherto been to work up timber in the forests with axes into joists, &c., as there are no means of getting it down in beams or logs. I introduced sawing in lieu of this wasteful system in the Pulney forests during the year, and for 1871-72 have insisted that all timber brought to depôt worked up must be sawn in the forests. I anticipate some trouble with regard to this at Pereacolum, but it is better to stop all felling than allow such waste to go on.

I think it might be possible to construct timber roads or dragging paths at a comparatively small cost both in Pulney and Pereacolum, so that the timber might be brought down in log, but we should have to keep our own buffaloes, as it is not "*Mamool*" here to employ them in dragging timber as in Salem, and the supply would not justify the employment of elephants. Sawing in the forests appears, therefore, the only plan, but great care must be taken that the

trees to be felled are selected or approved of by the Overseer or Sub-Overseer, and that the contractor's operations are carefully supervised, in order to check waste and felling of immature trees. Beams of Teak, Vengay, and Blackwood of considerable scantling can be supplied from Cumbum, and I proposed making arrangements with the Agent to the Travancore Government for the construction of roads or dragging paths and removal of timber from the Travancore forests on payment of certain stump fees or rate per cubic foot. If this can be arranged it would pay to employ elephants, and the plan appears to me much preferable to that of allowing the Travancore Circar to establish a depôt within our limits, which is open to many objections.

The preservation of the sholahs on the Upper Pulneys has received much attention. Fifteen trees, containing thirty-five bandy-loads or 700 cubic feet, were removed from the main sholah at Kodikanel, but the supply of firewood has been mainly drawn from more remote sholahs by head-loads removed on tickets issued by the Deputy-Tahsildar at Vilputty.

Quantity of timber felled and stored in depôts, &c.

3. 9,704-1-8 cubic feet of timber were felled and stored in the several depôts during the year; 4,209-8-2 cubic feet were carted from Cumbum to Periacolum, and 376-8-1 cubic feet from Periacolum to Madura.

The rates all round are still very high, and I see little chance of reducing them materially till we have better roads, our own carts and cattle, and adequate working establishments to enable us to be entirely independent of the local timber-merchants, wood-cutters, and cart-owners. I have, however, again succeeded in reducing the felling rates for Cumbum Depôt from Annas 10 to 9 for Teak, Vengay, and Blackwood, and from Annas 8 to 6 for other timbers which is not exorbitant, as it includes carting from the forests to depôt, an average distance of ten or twelve miles.

When I took charge the rate for this depôt was Annas 12 per cubic foot.

Owing to the frequent changes in the Overseer in charge only one cart has been finished and another nearly so. There is no one able to construct sling-carts, which are much required.

If an Assistant Conservator is appointed for this district only, he cannot do better than arrange a complete system of Departmental Establishments for felling, sawing, dragging, and carting timber which, with the plantations, should occupy all his time.

Elephants and other cattle and carts in the forests, &c.

4. As stated above, all work is at present on contract, and we are entirely in the hands of the contractors as to rates.

Timber, Firewood, Bamboos, Charcoal, &c., removed on License and Free Pass.

5. Statements A. and B. exhibit the quantity of timber, firewood, &c., removed on license and free permits. Only 780 cubic feet of reserved and 9,860 cubic feet of unreserved timber have been taken on license, whilst upwards of 37,000 cubic feet have been taken on free permits, and 12,340 tons of firewood, besides ten times that quantity taken free on head-loads for which no permits are required, and of which, therefore, we have no accounts. The quantity of timber taken on license tallies almost exactly with that taken last year; but the free felling has increased nearly four-fold, and is in excess of the annual yield of the forests. Some measures appear necessary to check excessive grants over which we have no control.

Number and Amount of confiscated logs, &c.

6. Statement C. exhibits the quantity of timber, &c., confiscated and sold during the year. The amount realized was Rupees 107-1-7, of which Rupees 30-15-10 were disbursed to informers, who are almost invariably Departmental servants, and the balance, Rupees 76-1-9, credited to Government. The amounts are almost identical with those of 1869-70.

Timber of all descriptions sold to merchants from Government Depôts, &c.

7. 3,815-5-0 cubic feet were sold from the Government Depôts during the year realizing Rupees 4,296-3-8; 906-11-9 cubic feet were also sold from the Pulney Depôt on account of Ayagudi and Rettiembady Zemin forests, realizing Rupees 1,020-5-11. There is a great demand for timber of the better descriptions, *e.g.*, Teak, Vengay, and Blackwood; but the people can hardly be induced to make use of the more ordinary sorts of which there is still an ample supply available.

Timber supplied to Public Department, &c.

8. No timber was indented for or supplied to Public Departments, and Government, in G.O., Public Works Department, No. 352, dated 4th February 1871, do not support my proposals and those of the Acting Superintending Engineer on the subject. In the above Proceedings the bazaar-rate in Madura Town, Rupees 1-13-0, is erroneously quoted as our depôt-rate, which is considerably lower, and our rates were disadvantageously compared with those of the Superintending Engineer, as being for "rough wrought," whilst the latter were for "wrought and put up," whereas in reality the rates for the latter were "rough wrought" only in most instances.

All the higher Executive Officers of the Department Public Works themselves allow that good and seasoned timbers, such as we could supply if we know that the demand would be certain, cannot be obtained in the bazaar, and that contractors make use of inferior and unseasoned wood, which it is most difficult to detect until months or years after a building is finished.

This would not occur in dealing with a Government Depôt whose books could be referred to show when the timber was felled, and for these and many other reasons, which I have already brought to notice, I must still strongly advocate the general supply of all timber for Government works from our depôts.

Outstanding Advances enumerated, &c.

9. The only outstanding is a sum of Rupees 1,200 against the Ayagudi and Rettiembady Zemindary, being payments made for felling, pay of establishments, &c. The amount is more than covered by the stock of Zemindary timber in our depôts, and the greater portion will be adjusted within the current month.

Plantations.

10. In Plantation No. I., Vannathipara, Cumbum Valley, 1¼ acres of fresh jungle have been cleared, 1,500 pits dug, and the same number of seedlings put out during the year. There are now 2,570 young trees in the plantation which, with the exception of some 250 badly planted, are in good condition, and the oldest, planted only eighteen months ago (in October 1869), are 11½ feet in height, and five inches in circumference near the base, with fine straight stems and healthy foliage. The expenditure during the year has been Rupees 275-8-0, and the total from the commencement up to the 31st March 1871 Rupees 617-1-7; 200 seedlings are ready for transplanting. I am not satisfied with the progress, though the experiment shows that with care and ordinarily favourable seasons, the plantation will prove a success. The seedlings both in the past and former years were not planted out till too late in the season, owing to the late period at which the seed was received and sown, and the necessity of an irrigating channel (alluded to in my last, but not carried out for want of levelling instruments) or one or two wells is imperative, and should at once be attended to.

The place is notoriously feverish at some seasons of the year, during which there is great difficulty in getting any one to remain there. You visited this plantation in September 1870, and were pleased with the growth. The indigenous forest, which is of fine growth, but does not contain much Teak, though there is some quantity a few miles off, is only partially cleared, and the shade of those trees which remain is, I think, an advantage. I recommend that the plantation be gradually, but steadily extended in an economical way, and the rearing of Vengay, Blackwood, &c., should receive attention; and if, as I see the Collector states in a recent letter to the Board, the land above near Gundappa Naick's Tavalum is Government property, I would strongly advocate the commencement of a Teak plantation there; the soil and elevation being, as you are aware, eminently adopted for the growth of the tree to the best advantage. One Maistry could look after both plantations.

The soil of the present plantation is a fine rich mould, nearly black on the top and reddish within a foot from the surface, at and below which depth it becomes slightly gravelly.

A portion of the seed of the Bermuda juniper, forwarded with your letter, No. 2,366, dated 28th October 1870, was sown in the nursery, but none has germinated. The remainder will be tried during the current year. In Plantation No. II., Pulney Hills, which is sub-divided into A. (Acacia) and E. (Eucalyptus), 1,250 pits have been dug, and 2,885 seedlings, viz., 2,106

Eucalyptus of the globulus, amygdalina, marginata, and other varieties, and 779 Acacias (A. Melanoxylon and deulbata) planted out. Owing to the failure of the first sowing, recorded in my last, we were unable to get ready more than the above in time, as the gardener and coolies employed were new to the work. Good progress should be made this year, as a large quantity of seed has been sown in nursery beds, and there is already a considerable stock of seedlings ready for transplanting, but the great want is trained supervision. The Deputy-Tahsildar on the hills was placed in charge by the Acting Sub-Collector, but he has done little or nothing in the way of supervision which, however, he has made the reason or excuse for negligence in the performance of his other duties, which has induced the Collector to put a stop to the arrangement.

The Collector recently proposed to transfer the Eucalyptus plantation to the local jungle conservancy, but, on ascertaining that I do not agree in the expediency of such a step, has modified his proposal to a request that the amount paid from local funds for the site, amounting to Rupees 957, should be debited to the Forest Department. I have already reported that the expenditure was incurred with quite another object, *i.e., sanitation,* and it was afterwards decided to plant the site as the best means of utilizing it and improving the settlement.

The expenditure would therefore appear to be fairly debitable to general expenditure (imperial) as originally proposed ; if not, it may be paid by us, but cannot be debited against the plantation. Rupees 73-3-4 were spent in enclosing, draining, and formation of a new terraced nursery, and Rupees 40 were paid in compensation to a house-holder. The expenditure during the year has been Rupees 486-13-8, and the total cost up to date Rupees 665. In the Eucalyptus plantation we have, besides the young trees planted out by us, nearly two hundred which were planted by the house-holders, and in the latter we have 378 trees planted by Mr. Sperschneider and Mr. Levinge. These last vary in height from twenty-five to six feet, and in circumference from one foot and-a-half to six inches. Their growth has been hitherto impeded by their being burnt over annually, which I have now prevented by cutting a broad fire trace on each side of the plantation. Of the seedlings planted in last year the Blue gums (E. globulus) have done best, and some have attained a height of seven or eight feet and three inches in circumference ; of the Acacias the highest (Melanoxylon) measure some three feet high.

Some 200 of the Eucalypti died in September and October, and about the same number were washed away by heavy rain in January, but I have been unable to obtain accurate accounts from the Deputy-Tahsildar ; out of fifty trees planted in Pereacolum Timber yard, forty-nine are doing fairly, and one (Poinciana regia) has attained a height of six feet. One tree has died.

In Plantation No. III., Pulney Talook, the progress has not been satisfactory, owing to there being no one to superintend it properly. Only 200 Teak trees were put out, and of those fifty have died, said to be from excessive water-supply which I cannot believe. Of the remainder the best measure from four to five feet high and four inches in girth ; but the majority are much smaller. The expenditure has been Rupees 120, which includes preliminary expenditure, clearing of jungle, pitting, &c., and pay of a watcher, who also looks after the surrounding jungles. The expenditure is of course out of all proportion to the results ; but I hope there will be a marked improvement in the current year, as the site is excellent and well supplied with water throughout the year.

Forest-products.

11. No orders having been passed on this important subject, I have refrained from collecting or leasing them out, as there are as yet no reserved forests properly so called. I have received many offers to take their collection on contract. During the year I ascertained that cardamoms grow freely, and are cultivated to some extent on the Lower Pulneys. I think their cultivation and collection should be attended to on account of Government, and have selected one excellent site. The tamarind tree revenue alluded to in my last has not been transferred to us, and continues to be credited to Land-revenue, which is strictly against the Board's orders. I addressed the Acting Collector twice on the subject during the year.

Trespasses or damages committed in forests, &c.

12. An abstract of forest-offences is exhibited in Statement D., which is compiled from the quarterly returns submitted in accordance with Circular No. 16 of 1867. The per-centage of convictions obtained is high.

Health of the Forest Establishments.

13. The fixed establishment have, on the whole, enjoyed good health, although all ranks have suffered more or less from fever. The working establishments, particularly in the Cumbum Valley (plantation and felling timber,) suffered severely, and there were several deaths amongst the wood-cutters employed by the contractors.

Any valuable, new, or rare plants discovered, &c.

14. No new or rare plants have been discovered, and little progress has, I regret to say, been made in procuring specimens of the timber, flower, and fruit of the various trees. The establishments are, in fact, so weak that they are unable to perform their more legitimate and necessary duties of watching the forests, checking licenses, &c. Seed of several descriptions has been supplied to the Central Office for the Mauritius Government, and large quantities of all descriptions are now being collected.

Summary of Operations.

15. A general outline of operations, as regards working and conserving the forests, has been given under head II. of this report.

The main object has been to substitute departmental for license felling, which is now only retained in the Meylur and Madura Talooks, and for junglewood, firewood, &c., which we could never store in depôts in the other talooks.

There is still room for extension of departmental agency, and we should form depôts at Madura and Dindigul, instead of selling, as we do now, through the agency of a local European Firm, to whom we pay commission. The forests under the Court of Wards have not yet been handed over to the charge of the department, and little progress has been made in securing the management of private forests by purchase or lease.

I regret to observe by a recent letter of the Collector to the Board that he thinks we do not regulate the felling, merely "purchasing timber from wood-cutters and selling it from depôts at 100 per cent. profit." I need scarcely say that this is not the case. The felling is carefully supervised, and, in future, only trees previously marked will be felled, and we do not add on above fifty per cent. to the cost of felling, squaring, and carting, which barely represents the original value of the timber, which is Government property.

The supply is not equal to the demand; in fact, I doubt if the whole legitimate yield of the forests is equal to the quantities felled free on passes issued by the Talook officers which must be circumscribed.

The forests of the Rettiembady and Ayagudi Zemindary have been worked by the department on behalf of the Zemindar, and the net profit to him for eleven months has been Rupees 761-14-6. Owing, however, to a change in his Manager, and other causes, he has given notice that he wishes to resume charge himself, and the forests will be handed back to him on the 1st July, unless other arrangements for leasing or purchasing this can be made before that date, in accordance with the wishes of Government.

Financial Results.

16. The financial results, as exhibited in the usual form, show a balance against the forest of Rupees 3,121-8-0. I would call your attention to the greatly increased receipts, whilst the amount of timber actually felled and removed on license has not been increased, and the enormous quantity of nearly 40,000 cubic feet of building timber taken free on passes issued by the Revenue Officials.

The result has been obtained solely by increased supervision and prevention of unauthorized felling, but much still remains to be done in this respect. Now that the valuable jungles near Madura have been transferred to the special department, I estimate that a revenue of Rs. 20,000 can with ease be realized in 1871-72 without excessive felling or unnecessary curtailment of the people's privileges.

1. *Tinnevelly District.*—Second-Class Overseer Newman was in charge up to July, when he

Introductory Remarks, mentioning the name of the Officer in charge, &c.

was suspended, and Mr. Glenny, Assistant Collector, was in charge up to the month of October when he proceeded home on sick certificate. 3rd-Class Overseer Appavoo Pillai was transferred to the district from Madura in July, and promoted to the 2nd Class on Mr. Newman's reduction and transfer to another district.

Overseer Appavoo has not done so well as I expected, or as he is capable of doing, and appears to have lost nearly all interest in his works, which he is apt to slur over or neglect. His charge has, however, been far beyond that which any one man could supervise efficiently, and his executive duties alone are very heavy. I trust that, now that there is an Assistant Conservator in charge, he will do better and qualify for further promotion, for which his education and general character fully qualify him. The Assistant Conservator Mr. Hayne assumed charge in January.

Measures taken for extending, improving, or protecting the forests, &c.

2. Little progress can be reported in this respect, as, until Mr. Puckle's return, it was impossible to get anything done in the face of the Sub-Collector's opinion that our measures were illegal in the absence of a special enactment. Mr. Puckle has taken up the matters since his return, and believe convinced the Sub-Collector of the justice and advisability of his schemes.

The Boundary Commission or Committee was not sanctioned by Government, and the boundary disputes therefore remain "*in statu quo*." I submitted a report after careful inquiry and inspection of the several Zemindary forests of the districts, which has been printed in Board's Proceedings No. 916, dated 3rd March 1871.

Quantity of timber felled and stored in depôts, etc.

3. 3,892-9-8 cubic feet have been felled and stored in depôts during the year, and departmental working for reserved timbers has now been extended to four talooks. The rates are very high, but are being reduced as we extend operations, and Mr. Hayne is giving attention to the introduction of saw machinery, forest-roads, &c., which will materially lower the cost of working.

Elephants and other cattle and carts in the forests, &c.

4. None.

Timber, firewood, bamboos, and charcoal removed on License and Free Passes.

5. Returns A. and B exhibit the quantities of timber, &c., removed under these heads.

The quantity of timber removed on seigniorage has been reduced by nearly 30,000 cubic feet, and the free felling exhibited by the returns is very small, and the same may be said with regard to firewood. I cannot help thinking that the people help themselves freely without obtaining pass, and therefore we have no reliable information. Were this not the case there would doubtless be complaints, whereas both the Assistant and myself have had none. The village-officers in this district have not yet been entrusted with the issuing of free passes.

Number and amount of confiscated logs, &c.

6. The number of confiscated logs and amount realized is shown in Statement C. The establishments have been fairly vigilant, but are inadequate, and require closer supervision by trustworthy officers.

Timber of all descriptions sold to merchants from Government Depôts, &c.

7. 964-8-11 cubic feet sold from the depôts at Umbasamudrum and Vasudavanullur realized Rupees 1,473-15-7, which is satisfactory. The demand is not very great as large stocks had been accumulated by merchants on our giving notice of the early stoppage of the license system. This is so far advantageous that it will give the timber in our depôts time to season.

Timber supplied to Public Departments, &c.

8. None (*vide* remarks in Madura Report). I trust something may yet be done in this respect.

Outstanding Advances enumerated, &c.

9. These amount only to Rupees 110, which calls for no remarks.

Plantations.

10. Planting has not yet been commenced by the department, but a scheme of the Sub-Collector for expending Rupees 5,000 per annum from Local Funds met with the approval of the Board, and is, I believe, in progress.

The proposal for the extension of Cinchona planting has, I am glad to say, been negatived. Measures for extensive planting, both on the hills and in the plains, are now under consideration

of the Collector and Assistant Conservator, and deserve encouragement, though each scheme should be thoroughly sifted by competent officers before being commenced.

Forest Products.

11. With the approval of the Collector we have collected cardamoms, &c., in the reserved or inner belt of forest, on account of the departments paying liberal rates and employing the hill-men as much as possible. Sales have been held by auction at the Talook Cutcherry, and Rupees 2,108-10-6 realized; the price of the cardamoms per tola having—thanks to the Overseer's care and knowledge of the subject—been raised from Rupees 27 (realized by Mr. Newman) to Rupees 40, at which it now stands. I think we should pay attention to the cultivation of this and other forest-trees and plants valuable for their products, which would amply repay us and increase the supply available for commercial and medicinal purposes.

The collection which was at first restricted to the forests of the Umbasamudrum Talook is now being extended to the others; but the *reserved forests* really require demarcation and to be notified in the *Fort Saint George Gazette* according to orders, in order to secure convictions for trespass, &c., by a Court of Law. I do not see why Government should not also collect the products in the unreserved tracts, not including those given to the villagers for free felling, whilst allowing free ingress, grazing of cattle, &c., and thus inflict no hardship on the people.

Trespasses or damages committed in forests, &c.

12. Statement D. exhibits, in abstract form, the number of cases of theft, mischief, &c., detected during the year and reported in the quarterly returns. We have been fairly successful in obtaining convictions, but many cases have escaped detection, and there is a good deal of unauthorized felling with the connivance of the lower grades of employés.

Health of the Forest Establishments, &c.

13. The establishments have been generally healthy; one Peon died suddenly in February 1871, and all ranks have suffered more or less from fever, but not of a severe type.

Any valuable, new, or rare plants, &c.

14. Mr. Deschamp reports very highly of the Shenkuranthy (Gluta Travancorica) as a furniture wood, and two small boxes made up for me as specimens exhibit a fine grain and rich colour, whilst the wood has not warped in the least, although exposed to the hot and long shore winds in Mr. Deschamp's shop. Specimens of all descriptions are now being prepared, and the flowers and fruit of several species required for identification will, I hope, be obtained during the current year. The establishments have hitherto been very remiss in this respect and the collections of seed, but really all have more work to do than they can well attend to.

Summary of Operations.

15. As I stated under paragraph 2 I cannot report much progress, owing to the delay in reorganization of the department and introduction of a Forest Act, and to my own time being too much taken up with inspections and supervisions of four districts, to attend to the executive duties of any one portion which were thus, prior to the Assistant Conservator taking charge, entrusted to inadequately paid subordinates and left unattended to.

The Conservancy Establishments require careful revision in consultation with the Collector. We assumed charge of the Singumputty forests under the Court of Wards in July, which cannot fail to have a good effect on conservancy and working generally. The forest-revenue of the Estate, which is mainly derived from seigniorages on firewood and junglewood taken for sale for eight months, has been Rupees 4,310-10-9, and expenditure Rupees 2,499-2-0.

Timber was being worked departmentally, but Mr. Puckle has thought it best to stop felling until a forest-road now under construction is completed.

In this I fully concur, but there are some other details in connection with the working of the forests to the best advantage where our opinions differ, but which can easily be settled by reference.

Financial Results.

16. These are exhibited in the usual form, and here as well as in Madura show a considerable increase and approximate very nearly to my Budget and Regular Estimates. I see no reason to alter the opinion expressed in my report

for last year that the forest-revenue of this district might reach to a lakh of rupees without detriment to the forest, if forest-products were worked up and felling carefully carried on. The Sub-Collector recently proposed to do away with all seigniorage collections which I deprecate strongly as an unnecessary sacrifice of revenue, which we can employ most usefully in planting for many years to come.

Introductory Remarks, mentioning the name of the officer in charge, &c.

1. *Trichinopoly District.*—I first visited the district along with you in August 1870, and returned in December to commence the planting operations and selection of reserves for supply of wood-fuel to the railway and public in general.

On our failing to obtain the services of Mr. Macintosh as Overseer I transferred 3rd-Class Overseer A. Appavoo (junior) from Madura to this district. He has done very well so far, and I have every reason to suppose will continue to give satisfaction.

Plantation and Reserves.

2. Operations have been fully reported in the Periodical Progress Reports, and all are being carried on in direct communication with the Collector, through whom, in my absence from the district, the Overseer submits his Weekly and Monthly Reports, &c. The proposals already made and approved of may be briefly stated as follows :—

1*st.*—Planting of upwards of 1,000 acres of Padugay Poramboke lands in the Trichinopoly and Kulitalay Talooks, and of such further area as may be found available on the banks of the river in the Moosery and Perambalore Talooks.

2*nd.*—Planting on irrigated land as an experiment, which I trust will yet extend to 50 or 100 acres.

3*rd.*—Planting at and near the Yeddinullaypatty Tank, close to the cantonment, about 200 acres.

4*th.*—Planting at Tiruvembore, the first station on the line to Negapatam.

5*th.*—Reserving and planting up existing jungles at and near Manaparay and Culputty. The details of all these will have to be worked out, and operations vigorously carried on during the current official year, meanwhile seed in large quantities and of several descriptions is being collected, nurseries formed, and the tracts selected for planting fenced.

As Government have sanctioned the appointment of an Assistant Conservator to superintend the executive work, I have no doubt of the general success of the operations, provided that they are carefully supervised and inspected from time to time by a competent officer, and that the Assistant works entirely under the Collector and with the support of the Tahsildars, to enable him to do which his charge should be limited to one Revenue District.

Expenditure.

3. The expenditure amounts to Rupees 888-13-0, including extra batta drawn by me when in this district and Tanjore, as authorized by G. O. No. 1,960, dated 6th December 1870. As there was no separate allotment for Tanjore and no provision in the Budget for the pay of the Overseers sanctioned in G. O. No. 1,258, dated 17th August 1870, one of whom is employed in Madura, the expenditure at Negapatam and pay of both the Overseers swell the debit of the Trichinopoly account. These items can be separated and adjusted at any time, and I would recommend that such should be done so as to exhibit in the accounts the actual expenditure incurred in each district "*ab initio.*"

Introductory Remarks, &c.

1. *Tanjore.*—I visited Negapatam with you in August and returned there in January 1871. The Sub-Collector having, meanwhile, ascertained what land was available for planting, I also visited Tanjore and surrounding country with a view to planting, and reported fully the results in the Periodical Progress Reports.

Maistry and Sub-Overseer Parasurama Moodelly joined at Negapatam in March from the Trivellum Plantation in North Arcot, and is working well under the Sub-Collector at Negapatam, where the nursery beds have been formed, Casuarina seed put down, and the first patch for planting extending to about twenty-five acres fenced in.

Plantations.

2. The proposals already submitted for operations in this district embrace :—

1*st*.—Casuarina planting at and near Negapatam.

2*nd*.—Planting of thorn and other trees in the neighbourhood of Tanjore on Palace lands at the expense and for the benefit of the Estate.

3*rd*.—Planting between Trichinopoly and Tanjore in the neighbourhood of the line of railway.

A good Overseer will be required to act under the Collector's orders, who promised to put one of his Assistants in immediate charge, which would obviate the necessity of dividing the attention and responsibility of the Assistant Conservator at Trichinopoly betwixt two districts. Supervision and inspection by yourself or one of the Deputy-Conservators will of course be necessary, and is expected by the Collector and Sub-Collector to aid them in carrying on the work. As operations progress and extend generally throughout the district a special Assistant or Sub-Assistant as Executive Officer may be found necessary.

Expenditure.

3. The expenditure during 1870-71 amounts to Rupees 120-8-0 (including purchase of tools, &c., for the Negapatam plantation), which, as already stated, has been included in the accounts for Trichinopoly.

I have the honour to be,

Sir,

Your most obedient servant,

(Signed) C. J. WALKER, Lieut.,

Deputy-Conservator of Forests.

A.

Statement showing Quantity and Description of Timber, &c., removed from the Forests of Madura and Tinnevelly on License and Tickets during the official year 1870-71.

District.	Cubical Contents.		Firewood.			Bamboos.		Charcoal.	
	Reserved Timber.	Unreserved Timber.	Tons.	Cwt.	lbs.	Bandy-loads.	Head-loads.	Bandy-loads.	Head-loads.
Madura *	780	12,692	3,344	10	12½	1,431	7,952	89	1,613
Tinnevelly † ...	24,080	48,893	519	77	87½	177	1,315	1,401½	16,559
Total ...	24,860	61,585	3,863	87	110	1,608	9,267	1,490½	18,172

* For 11 months. † For 12 months.

Note.—Reserved and unreserved timbers have been calculated into cubical contents at twenty cubic feet per bandy-load and one cubic foot per head-load.

Firewood has been calculated into tons, &c., at 1,000 lbs. per bandy-load and sixty-two and-a-half lbs. per head-load.

(Signed) C. J. WALKER, Lieut.,

Camp Madura, 10*th April* 1871. *Deputy-Conservator of Forests.*

B.

Approximate Statement of Articles granted on Free Passes to Ryots for agricultural purposes and erection of villages or houses destroyed by fire during the year 1870-71.

District.	Cubical Contents.		Firewood.			Bamboos.		Remarks.
	Reserved Timber.	Unreserved Timber.	Tons.	Cwt.	lbs.	Bandy-loads.	Head-loads.	
Madura ...	60	37,186	12,340	...	...	9	1,745	For 11 months.
Tinnevelly ...	...	3,348	3	3	40	...	12	For 12 months.
Total ...	60	40,534	12,343	3	40	9	1,757	

Note.—Reserved and unreserved timbers have been calculated into cubical contents at twenty cubic feet per bandy-load and one cubic foot per head-load.

Firewood has been calculated into tons, &c., at 1,000 lbs. per bandy-load and sixty-two and-a-half lbs. per head-load.

(Signed) C. J. WALKER, Lieut.,
Deputy-Conservator of Forests.

Camp Madura, 10*th April* 1871.

C.

Abstract Statement of Timber, &c., confiscated and sold in the Madura and Tinnevelly Forests during the official year 1870-71.

District.	Description.	No. of Bandy-loads.	No. of Head-loads.	Amount realized.			Amount credited to Government.			Amount distributed as rewards and certain expenses.		
				Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Madura ...	Reserved Timber ...	8	1	77	7	0	51	4	0	26	3	0
	Unreserved Timber ...	3¾	9½	9	11	4	8	6	8	1	4	8
	Do. Bamboos ...	½	28	5	5	2	4	2	11	1	2	3
	Do. Firewood ..	2½	112	14	2	1	11	14	8	2	3	5
	Do. Charcoal ..	...	4	0	8	0	0	5	6	0	2	6
	Total ...	14¾	154½	107	1	7	76	1	9	30	15	10
Tinnevelly ...	Reserved Timber ...	18⅜	4	303	10	0	197	10	0	106	0	0
	Unreserved Timber ...	19¼	23	133	1	3	69	10	5	63	6	10
	Do. Bamboos ...	...	22	2	6	0	1	7	0	0	15	0
	Do. Firewood ...	...	244	53	11	9	31	1	2	22	10	7
	Do. Charcoal ...	1½	35	12	15	4	11	6	0	1	9	4
	Do. Products ...	...	...	136	4	0	97	4	0	39	0	0
	Total ...	39⅛	328	642	0	4	408	6	7	233	9	9
	Grand Total ...	53¼⅛	492½	749	1	11	484	8	4	264	9	7

(Signed) C. J. WALKER, Lieut.,
Deputy-Conservator of Forests.

Camp Madura, 10*th April* 1871.

D.

Abstract Statement of Forest Offences detected during the year 1870-71 *and prosecuted before the Magistracy or disposed of departmentally with results.*

District.	Nature of Offence.	No. of Case.	No. of persons charged.	By whom tried.	Result.
Madura.	Theft under Section 377 of Indian Penal Code.	17	43	Sub-Magistrate of Pereacolum, Chinnamanoor, Pulney Hills, Meylur, and Dindigul.	14 convicted ; 3 released.
	Mischief under Section 426 of Indian Penal Code.	1	1	Sub-Magistrate of Chinnamanoor.	Convicted.
	Theft under Regulation 10 of 1816.	40	* 211	Village Moonsiff of Thengary, Meylur, Dindigul, Pulney, Paumbutty, Iyenpilly, Balasamudrum, Condaputty, Gudalur, and Gungavaraputty.	All convicted.
	Breach of Forest Rules..	6	8	Forest Overseer	Confiscated.
Tinnevelly.	Theft under Section 379 of Indian Penal Code.	25	148	Sub-Magistrate of Umbasamudrum, Streevelliputtur, Sunkaraninarcoil, Nangoonery and Wartrap.	18 convicted 7 released.
	Trespass under Section 441 of Indian Penal Code.	1	10	Sub-Magistrate of Streevelliputtur	Convicted.
	Under Section 447 of Indian Penal Code.	1	1	Do. Umbasamudrum...	Released.
	Under Section 186 of Indian Penal Code.	1	4	By the General charge Deputy-Magistrate.	Do.
	Theft under Regulation 10 of 1816.	24	150	Village Moonsiff of Vadagherry, Trichamungadi, Poolicngudi, Alwarcoorchy, Vickramasingapurum, Valaydum, Venganullur, Calwad, and Amboor.	All convicted.
	Breach of Forest Rules.	1	13	Forest Overseer	Confiscated.
	Total of Cases and Persons charged and percentage of convictions.	117	589		

The number of cases convicted being 105, the percentage is nearly 90 per cent., which is very high, and reflects much credit on the department.

(Signed) C. J. WALKER, Lieut.,
Deputy-Conservator of Forests.

Camp Madura, 10*th April* 1871.

Return of Forest Offences tried before the Magistracy and those settled departmentally during the fourth quarter ending 31st March 1871.

Place where and Date when Offence was committed.		Offence.	No. of Persons charged.	By whom tried.	Result and Punishment, if convicted.	Remarks, if any, recorded by trying Officer.	Informer.	Remarks.
Nuttum ...	27th Jan. 1871	Theft under Section 379 of Indian Penal Code.	3	1st-ClassSub-Magistrate, Meylur.	Fined 3 Rupees each ...	.....	Sub-Overseer.	
Coopaupari ...	1st ,, ,,	Do. do. ...	6	Sheristadar of Pereacolum.	1st prisoner fined 8 Annas and the rest 2 Annas	.....	Duffadar Syed Emam.	
Kamyagowndenputty.	29th ,, ,,	Do. do. ...	1	Sub-Magistrate of Chinnamanoor.	Fined 15 Rupees ...	.....	Narrain Reddi and another.	
Senthoo Mullay...	20th ,, ,,	Theft under Regulation 11 of 1816.	2	Village Moonsiff of Andiputty.	2 hours' imprisonment...	.....	Tannah Peon.	
Athacovil Mullay..	12th March ,,	Do. do. ...	1	Do. do. ...	1 hour's simple imprisonment.	.....	Do.	
Sundakaithally Mullay.	15th Jan. ,,	Do. do. ...	1	Village Moonsiff of Pereacabennothoor.	2 hours' do. ...	.....	Pulney Peon.	
Meylur ...	22nd Feb. ,,	Do. do. ...	12	Village Moonsiff of Meylur.	Do. do. ...	.....	Sub-Overseer.	
Do. ...	25th ,, ,,	Do. do. ...	1	Do. do. ...	Do. do. ...	.....	Narrayanasamy Naick.	
Naruniputty ...	4th March ,,	Do. do. ...	3	Village Moonsiff of Naruniputty.	Do. do. ...	.....	Police Constable No. 31 of Meylur.	
Do. ...	23rd ,, ,,	Do. do. ...	2	Do. do. ...	1 hour's imprisonment...	.....	Sub-Overseer.	
Kuviltoor ...	27th ,, ,,	Do. do. ...	5	Village Moonsiff of Kullundery.	Do. do. ...	.....	Do.	
				Departmentally.				
Pereacolum Hills..	2nd Feb. ,,	Breach of Forest Rules.	3	Overseer	Timber, confiscated ...	.....	Coopoo Pillay.	

Place where and Date when Offence was committed.		Offence.	No. of Persons charged.	By whom tried.	Result and Punishment, if convicted.	Remarks, if any, recorded by trying Officer.	Informer.	Remarks.
				Tinnevelly.				
Singamputty ...	11th Dec. 1870	Theft under Section 379 of Indian Penal Code.	24	2nd-ClassSub-Magistrate of Ambasamudrum.	Dismissed	.....	Iyencunnoo Koothalum.	
Paupanassem Hills	28th ,, ,,	Criminal Trespass under Section 447 of Indian Penal Code.	1	Sheristadar, Sub-Magistrate of Ambasamudrum	Do.	.....	Sub-Overseer and Peon Palavesam.	
Kadyem ...	19th Jan. 1871	Theft under Section 379 of Indian Penal Code.	2	Sub-Magistrate of Ambasamudrum.	Do.	.....	Sub-Overseer.	
Kalcad ...	14th Feb. ,,	Do. do. ...	1	Sub-Magistrate of Nagunady.	20 days' rigorous imprisonment.	.....	Do.	
Do. ...	Do. ,,	Theft under Regulation 11 of 1816.	2	Village Moonsiff of Kalcad.	Put in stock for 6 hours in Village Tannah.	.....	Peon Kunnapan.	

(Signed) W. C. HAYNE,
Asst. Conservator of Forests.

CAMP MADURA, 17*th April* 1871.

APPENDIX F.

ASSISTANT CONSERVATOR'S OFFICE,
CAMP SALEM, *6th May* 1871.

From

J. NISBET, ESQ.,
Assistant Conservator of Forests, Salem,

To

MAJOR R. H. BEDDOME,
Conservator of Forests, Ootacamund.

SIR,—I have the honour to submit the Annual Administration Report of the Salem forests for the official year 1870-71.

The revenue amounts to Rupees 64,675-2-7, and the expenditure to Rupees 16,831-14-8, showing a net profit of Rupees 47,843-3-11 for the year.

Salem Forests.—Fourth-Class Overseer P. Rungiah Naidoo was in charge of the Range and Head-Quarter Office till November, when he was transferred to Madura Range on promotion, and Head Clerk Appavoo Pillay was appointed in his stead; the latter has carried out his duties to my satisfaction, but requires more experience.

The forests in this Range have been entirely worked on the license and voucher system, and timber has been felled to the amount of 133 bandy-loads of 1st class, 207 of 2nd, 360 of 3rd class; also 5,589 bandy-loads of firewood, charcoal, and bomboos, besides 42,673 head-loads of junglewood, bamboos, &c.

Jaghire forest on Periakulroyen Hills in Ahtoor Talook were purchased in the year 1869, and operations have been carried on since the commencement of the year under review. Amount of revenue realized is Rupees 691-1-7, and expenditure amounts to Rupees 575-15-0, of which sum Rupees 550 were paid to the Jaghiredar's Contractor for compensation in the suit filed by him against Mr. Walker.

No timber has been felled departmentally during the year, owing to the large supply brought into the local market by the contractor for the Chinnakulroyen Jaghire forests, and also by the merchants from Bhowany and elsewhere.

The quantity of timber confiscated and sold is shown in Statement D., and the amount credited to Government under this head, after the disbursement of rewards, is Rupees 193-10-11.

As there was no work for them one pair of bullocks and a cart were sold by public auction, and the amount credited under Miscellaneous head.

219-11-7 cubic feet of Vamboo and Vengay were carted from Pennagaram Depôt, and supplied to the Central Jail at this station for Rupees 233-10-5. The Railway Locomotive Department was supplied with 4,684 tons and 1,139 lbs. of fuel, upon this the seigniorage of Rupees 10,493-4-9 has been realized.

Outstanding amounts to Rupees 386-4-8.

The plantation at Mullapooram has, I am glad to say, been kept free from fire up to date, and I am in great hopes that the young Bahbool trees, sown broadcast by Mr. Cadell, will now come on, and gain sufficient strength during the coming rainy season to be perfectly safe hereafter.

Rupees 160-6-8 have been spent in digging pits and planting them with Vamboo and other trees from the nurseries; the above sum includes the pay of the Maistry in charge.

The plantation on the Shervaroy I would recommend being abandoned, and the Collector is of my opinion, as most of the trees are dead from the ravages of the goat moth.

When I assumed charge last June I found the weeds and grass in the plantation more than six feet high, enough to choke the growth of any plant; whenever the grass has been cleared I found about eighty per cent. of the trees dead.

The small nursery has been kept in order, and various descriptions of Australian trees have been sown with some success.

Rupees 278-13-6 have been spent on the plantation during the year, which includes the pay of the Maistry in charge.

The fenced reserves, A., B., C., have been kept clear of cattle, but although fire boundaries had been cut and extra watchers appointed, I regret to say B. and a smaller part of A. on eastern side of railway have been burnt. The cost of clearing boundaries and burning grass, pay of Maistries for the year amount to Rupees 1,064-10-6.

Four unfenced tracts have been selected for reserves between Mullapooram and Ahtoor station, and duly handed over to this department by the Revenue Department.

I have also marked off several more blocks for reserves, but owing to sickness have been unable to go round them with the Revenue authorities.

The fuel reserves are now under the care of a 3rd-Class Overseer on probation, Mr. Gamble, who will, I hope, do well.

A small quantity of Kuppli dye was collected departmentally from the Periakulroyen Hills, and sold at the rate of 10½ Rupees per Maund. The revenue under this head will, I trust, increase.

An abstract of quarterly returns of forest-offences is shown in Statement E., and I can only state that want of a Forest Act is much felt, as there is great difficulty in getting convictions for thefts, &c.

Fever has been prevalent in this range, and some of the establishment have suffered severely.

Operations have been carried on as usual, but the contract system was done away with before I assumed charge.

Tripatore Forests.—The range has been under the charge of 3rd-Class Overseer Mr. Franklin. He has carried on his work to my satisfaction, but has suffered severely from fever, which has prevented him from travelling about his range so much as I could wish. The forests in this range have been worked departmentally, but tickets are issued for firewood and charcoal. The only contract system carried on in this range is that described by me in my letter No. 10, dated 17th of April 1871. The quantity of timber removed from this range is shown in Statement B.

130 Maunds and 11 lbs. of Sandalwood billets, &c., were felled, prepared, and removed to the Market Depôt during the year.

1,974-5-11 cubic feet of 1st, 2nd, and 3rd class timber were felled, squared, and dragged and stored in Tripatore Depôt for sale.

Carriage of timber from forests to market Depôt was executed on contract, just the same as for felling, &c.

The quantity of timber confiscated amounts to Rupees 105-4-4, which is credited to Government and shown in Statement D.

213 Maunds and 9 lbs. of Sandalwood billets, &c., were sold to Bangalore merchants for Rupees 849-13-9 at an average rate for billets Rupees 4-1-0, roots Rupees 3-1-0, and chips, &c., Rupees 1-4-0 per maund.

2,266-11-6 cubic feet of timber sold for Rupees 1,892-1-2.

147-2-7 cubic feet of timber, valued at Rupees 110-6-7, remain in the timber yard.

No timber was supplied to Public Department, but the Railway Company was supplied with 4,157 tons and 1,101 lbs. of firewood, on which seigniorage of Rupees 9,312-12-6 has been collected. Rupees 36 remain to be adjusted, which is creditable to the Overseer.

There is one plantation at Putchoor, and the number of pits dug during the year is 1,280, at a cost, including the pay of the gardener in charge, of Rupees 93-10-1.

Reserved tracts are two in number, viz., D. and E., and they were preserved as usual, during the year. Expenditure against these reserves is included in item of Rupees 1,064-10-6 shown as expenditure against the reserves in Salem Range.

20 Maunds and 8 lbs. of Kuppli dye has been collected departmentally on the Javadies and other Hills, and sold for Rupees 260-5-4, which is fair.

Statement E. exhibits in an abstract form the result of criminal prosecutions, and the remarks already made on this subject with regard to Salem Range equally apply here.

Fever has been prevalent, and most of the establishment have suffered severely.

Operations were pursued to the interest of forests as well as to the increase of revenue.

Denkenicottah Forests.—This range was carefully supervised by 1st-Class Overseer Mahomed Alli Sahib, who has conducted his duties not only to my satisfaction, but to his own credit.

His behaviour in the boundary dispute by the Contractor of Nymasoonderum Agraharum has been especially brought to notice in my letter No. 226, dated 20th February 1871.

This range is almost entirely worked departmentally, and the amount of timber and bamboos, &c., removed from the forests is shown in Statement B. No contract of any sort, except the supply of timber and bamboos to the Market Depôt was given in this range during the year.

1,512 Maunds and 17 lbs. of Sandalwood billets were felled, prepared, and removed to the Market Depot during the year.

3,046-0-3 cubic feet of timber were felled, squared, dragged, and stored in the depôt for sale. Also 25,005 large and small bamboos were felled and stored in the depôt.

Two pairs of bullocks were at work in this range; but they were considered needless at present, and sold by public auction.

The quantity of timber and the amount realized are shown in Statement D.

1,259 Maunds and 23 lbs. of Sandalwood billets, &c., sold for Rupees 4,227-10-8.

3,315-0-1 cubic feet of timber sold for Rupees 2,931-13-1 and 25,005 large and small bamboos were sold for Rupees 567-10-11.

Outstanding advances amount to Rupees 311-0-5.

728 Madras Measures of Kuppli dye were collected departmentally at a cost of Rupees 45-8-0.

Statement E. shows all forest-offences tried before the Magistracy in this range.

Fever has been very prevalent; some of the establishment have suffered severely, and one or two Peons died.

I have the honour to be,
Sir,
Your most obedient servant,
(Signed) J. NISBET,
Asst. Conservator of Forests.

A.

Statement of Sandal and other Trees cleared of Creepers in the Salem Forests for the official year 1870-71.

Range.	Cleared by Peons.		Remarks.
	Sandal Trees.	Trees of other description.	
Salem	...	...	
Tripatore	486	221	
Denkenicottah	348	139	
Total ...	834	360	

(Signed) J. NISBET,
Assistant Conservator of Forests.

Camp Salem, 6*th May* 1871.

B.

Statement showing Quantity and Description of Timber, &c., removed from the Salem Forests on Licenses and Tickets during the official year 1870-71.

District.	Bandy-loads.										Head-loads.								
	Timber.				Firewood, Bamboos, &c.						Timber.			Firewood, Bamboos, &c.					
	First Class.	Second Class.	Third Class.	Total of Bandy-loads of Timber.	Firewood.	Bamboos.	Bark.	Charcoal.	Total of Bandy-loads of Firewood, &c.	Grand Total of Bandy-loads.	Junglewood.	Karanguli and Satinwood for Ryots.	Total of Head-loads of Timber.	Firewood.	Bamboos.	Bark.	Charcoal.	Total of Head-loads of Firewood, &c.	Grand Total of Head-loads.
Salem ...	161	231	394	786	8,276	7,616	497	401	16,790	17,576	3,486	907	4,393	...	54,706	...	27,261	81,967	86,360

C.

Approximate Statement of Articles granted on Free Passes to Ryots for agricultural purposes and erection of villages or houses destroyed by fire, &c., during the year 1870-71.

District.	Bandy-loads of Second Class Timber.	Bandy-loads of Junglewood.	Bandy-loads of Moongils.	Bandy-loads of Split Moongils.	Bandy-loads of Firewood.	Head-loads of Ooroots.	Head-loads of Props.	Head-loads of Poles and Pegs.	Head-loads of Ploughshares.	Head-loads of Handles.	Head-loads of Yokes.	Head-loads of Moongils.	Head-loads of Split Moongils.	Head-loads of Trusses.	Head-loads of long poles for ploughs.	Head-loads of small Rafters.	Head-loads of Pen Props.	Head-loads of Charcoal.
Salem ...	25	525	395	...	2	...	7,201	23,222	7,217	37	1,315	6,009	8,685	3,853	1,288	908	1,382	...

CAMP SALEM, 6*th May* 1871.

(Signed) J. NISBET,
Assistant Conservator of Forests.

D.

Abstract of the Statement of Timber, &c., confiscated and sold in Salem District during the year 1870-71.

Description.	No. of Bandy-loads.	No. of Head-loads.	Amount realized.			Amount credited.			Amount distributed as rewards.			Remarks.
			RS.	A.	P	RS.	A.	P.	RS.	A.	P.	
First Class Vengay, &c...	9¾	4	99	0	0	68	8	0	30	8	0	
Second do. Nama, &c...	7½	10	40	4	9	30	4	0	10	0	9	
Third do. Junglewood...	6	48	38	12	6	26	0	6	12	12	0	
Split Moongils ...	5	57	40	0	3	26	10	3	13	6	0	
Firewood	26½	...	23	2	0	13	9	0	9	9	0	
Bamboos.	43	200	175	7	2	125	0	0	50	7	2	
Charcoal	3½	32	21	7	6	15	15	6	5	8	0	
Total ...	101¼	351	438	2	2	305	15	3	132	2	11	

CAMP SALEM, 6*th May* 1871.

(Signed) J. NISBET,
Assistant Conservator of Forests.

E.

Statement showing the Forest Offences tried before the Magistracy during the official year 1870-71, *Salem Forests.*

Range.	Offence.	No. of Persons charged.	By whom tried.	Result and punishment, if convicted.	Remarks, if any, recorded by trying Officer.	Informer.	Remarks of Forest Officer.
1	2	3	4	5	6	7	8
Salem	Mischief.	2	2d. Class Sub-Magistrate.	Convicted ...	...	Forest Peon, &c.	
Do.	Theft ...	20	Do.	Do.	...	Do.	
Tripatore ...	Mischief.	37	Do.	36 Convicted and one acquitted.	...	Forest Peons.	
Do. ...	Theft ...	12	Do.	2 cases dismissed, and the other convicted.	...	Do.	
Do. ...	Do. ...	1	Do.	Convicted ...	...	Do.	
Denkenicottah.	Do. ...	12	Do.	Do. ...	...	Do.	

CAMP SALEM, 6*th May* 1871.

(Signed) J. NISBET,
Assistant Conservator of Forests.

APPENDIX G.

ASSISTANT CONSERVATOR'S OFFICE,
CAMP CHENGUM, *4th May* 1871.

From

H. L. WOOLDRIDGE, ESQ.,
Assistant Conservator of South Arcot Forests,

To

MAJOR R. H. BEDDOME,
Conservator of Forests, Ootacamund.

SIR,—I have the honour to submit the Annual Administration Report for the South Arcot Forests, with the usual accounts accompanying, for the official year 1870-71.

Introductory remarks, mentioning name of officer in charge, &c.

2. I took charge of these forests on the 9th November 1870 from the Assistant Conservator of Salem, the South Arcot forests having been up to that date under his charge. I have visited a large portion of those forests, from which the revenue of the range is principally derived. They are worked departmentally, and also by the license and voucher system. The holders of licenses are only permitted to cut and bring out third class, or the unreserved descriptions of timber, trees of the first and second class being reserved, and only felled by the department.

The 4th-Class Overseer, K. Ramier, who was in immediate charge when I arrived, appears to have given care and attention to the conservancy of his range, and to selecting favourable sites for fuel-reserves. He has now served as a 4th-Class Overseer in charge of South Arcot Range for three years, on a salary of Rupees 30 a-month, with Rupees 10 added as fixed travelling allowance. I can conscientiously recommend that his pay be increased and himself promoted to be a 2nd-Class Overseer, as he is an intelligent and deserving officer.

Measures taken for extending, improving, or protecting the forests.

3. Attention has been given to fencing and demarcating fuel-reserves; to the clearing of young saplings by the Forest Peons in their visits to the jungle; to the prevention of damage by cattle; and to changing, as necessity occurred, of the jungles for supply. Some few objections to fuel-reserve boundaries by ryots have been satisfactorily settled by giving up the land in question for their enjoyment. Considerable piece of jungle seem to have been felled at times by the ryots, who abandon them again after only a temporary cultivation of a year or so. The Divisional Officer has been communicated with regarding the occurrence. A proper Head-Quarter Office and Establishment would enable me to give more time to the conservancy and systematic working of the forests under my charge.

Quantity of timber felled and stored in depôts.

4. Cubic feet of timber (cubic feet 1,403 inches 7 parts 7 were felled and stored in depôts of Chengum and Trinomally. Rates of carriage are rather high, and carts are not at all times to be obtained: least of all when the season is favourable for the cultivators, who then have full employment for their cattle. This accounts in a measure for the small quantity removed from forests during the year.

Elephants and other cattle and carts for the forests.

5. Of these there are none. A few pair of strong country-bullocks, of which there are plenty to be obtained at reasonable rates on the occasions of feasts and cattle fairs, would supply timber to depôts with greater regularity, and at a lower rate per foot than is paid now. Serviceable carts might be built by the department cheaper than they could be purchased ready-made.

To bring all the forests under departmental working, Government transport cattle and carts will be necessary to supply the increased demand for timber, bamboos, &c., which will be made at the depôts.

Building timber 16,512 cubic feet, firewood 4,346 cubic feet, bamboos 917 bandy-loads, and charcoal 34½ bandy-loads were removed during the year. The head-loads have been included in the above figures, reckoning twenty head-loads to a bandy-load of twenty cubic feet. There is a considerable decrease in the revenue from these sources compared with the last year's (1869-70) results, for which I am unable to give any reasons. Statement A. attached gives particulars of the above.

imber, firewood, bamboos, nd charcoal removed under License.

7. 320 bandy-loads of timber, 437 bandy-loads of firewood, and 193 bandy-loads of bamboos were felled during the year on free passes by ryots as shown in Statement B. subjoined; the ryots are also permitted to take head-loads of firewood at pleasure without passes for domestic use and the like.

Timber, &c., felled on Free Passes for building and agricultural purposes.

8. Statement C. exhibits quantity and amount realized, viz., Rupees 130-10-0, of which, after deductions on account of contingent expenses and the rewards to informers, Rupees 89-2-0 were credited to Government. Violation of Forest Rules occur unfrequently and the Forest Establishment have been watchful, as will be seen from the List of Forest Offences tried (enumerated in Statement D).

Number and Amount of confiscated logs, &c.

9. Rupees 511-14-11 have been realized. This is an inconsiderable sum, but it is anticipated that a larger demand and more frequent sales will result during the next year, from the efforts that are being made to reduce the number of the third-class timber trees (which are termed junglewood in the Forest Rules for the district, and which have been heretofore felled on licenses obtained on payment of a seigniorage of Rupee 1 per cart-load), and also by a regular supply to depôts being obtained, should the purchase of cattle be sanctioned to transport the timber, &c. It has several times happened that merchants and others come to purchase timber from the depôts, but from no stock being kept on hand, and the supply by hired carts being very irregular, they generally have been obliged to go away unsatisfied, when they at once take out licenses to the required number of bandy-loads for junglewood, &c. I am able to state that several of the so-called junglewood logs are in reality considerably better timbers than some second-class trees as enumerated in the rules. I may instance such trees as "Cumbadari," "Mialardee," "Shellay," "Vukkancy," "Veppalay," "Cobyam," "Irool," &c., which are now rated as third-class trees. The purchasers of licenses at Rupee 1 for these good timber trees could afford to pay an increased rate to carts for delivery and thereby, and possibly other inducement, managed to take out the timber with village carts if they had none of their own; this will, I trust, be remedied by the proposed measures.

Timber of all descriptions sold to merchants and others from Government Depôts.

10. None was supplied during the year; the Assistant Engineer at Tricalore, however, has applied for a Memorandum of the depôt rates per cubic foot and amount of timber available, which has been supplied to him; and I hope that in future the requirements of Public Departments may, in a great measure, be supplied from our depôts. Timber of large scantling is, however, not commonly obtainable in these forests, but second-class logs of good sorts are numerous. A forest depôt at Kallacoorchi would be useful if the extent of the jaghire jungles on those hills were decided, and the felling of timber, &c., on jaghire passes in Government jungles could be reduced. To do this latter effectively would require a stricter supervision than is at present possible, with an executive of a Pygust and two Peons to the whole extent of the talook.

Timber supplied to Public Departments.

11. The amount of Rupees 87-6-0 remaining as outstandings at the end of the year is money paid to contractor on account of about forty bandy-loads of timber felled and lying in forests, which he has not yet been able to get out.

Outstanding Advances enumerated.

12. No plantations exist in the district as yet under the charge of this department. Many topes, which have been planted and kept by the local conservancy, are doing most favourably; they number thirty-one in Trinomallay Talook, in extent about 130 acres, containing about 3,500 trees of various ages. An experimental plantation near Chengum Depôt will be commenced shortly it is hoped. The Revenue-officer has

Plantations and Reserves.

been addressed with a view to obtain information as to the amount of land available on the site chosen, when further reference will be made to the Collector. Reserves have been most carefully looked after by the Maistries in charge, but the extent of jungle they have to overlook is considerable, and preservation of trees from fire, mischief, and cattle trespass might be made more certain if one Maistry to about 2,500 or 3,000 acres was sanctioned. The reserve tracts in the Gingee Division, in extent about 11,500 acres, is not in a compact form, but straggling and interspersed with villages and jungle roads, and is moreover surrounded by jungles under the local conservancy; the supervision, practically capable of being undertaken by this conservancy in this particular division, I have alluded to in my monthly report for February. Nurseries are being made.

Forest-products.

13. None collected by this department. "Kadukai" (the myrabolam of commerce) is obtained on the Ten Mullay. They are collected by villagers and Mullayalies and sold to Chetties and Reddies at a low rate. All revenue from Tamarinds have been carried to land-revenue credit.

Trespasses or damages committed in forests.

14. A statement of forest-offences is exhibited in subjoined Statement D. The sentences passed were, as a rule, commensurate with the damage done.

Any new or rare plants discovered.

15. No new plant has been discovered. Specimens of all the trees indigenous to this district, as well as seeds, are being collected.

Summary of Operations.

16. Operations have been, generally speaking, much the same as last year. As the Assistant Conservator only took charge in November, much progress has not been made. Fuel-reserves have received attention; preliminary steps have been taken with regard to nurseries and plantations; a new depôt has been formed at Trinomallay Cusbah, and the conservancy of the forests has been strictly attended to. The rights and privileges of the ryots have not been interfered with, and I have heard no complaints of their being subjected to annoyance by the Forest Subordinates. The Divisional and Talook officers have afforded every assistance in all matters connected with the departmental conservancy, and the Collector of the district has been consulted on every occasion, and his wishes attended to.

Health of Establishment.

17. Tolerable health has been enjoyed, though every one in the establishment has had fever more or less. One Peon has died. The *excessive* heat with only occasional showers of rain makes the climate at this period of the year most trying to the constitutions of the forest-officials, who are more exposed than probably others are, and to that of the Assistant Conservator in particular.

Financial Results.

18. The statement, accompanying, of financial results of the forests for the year shows a balance of Rupees 299-9-6 in their favour. This, although a small one, is better than was anticipated, as the large increase to the expenditure caused by the Assistant Conservator's pay from August had never been borne by the forests previously, and measures could not so quickly be adopted, whose effect would be to increase the revenue judiciously.

I have the honour to be,
Sir,
Your most obedient servant,
(Signed) H. L. WOOLDRIDGE,
Asst. Conservator of South Arcot Forests.

A.

Statement showing the Amount of Timber, Firewood, Bamboos, and Charcoal taken out of South Arcot Forest on Licenses during the year 1870-71.

Months.	Timber.		Firewood.		Bamboos.		Charcoal.	
	Bandy-loads.	Head-loads.	Bandy-loads.	Head-loads.	Bandy-loads.	Head-loads.	Bandy-loads.	Head-loads.
1870.								
April	153	44	39	6	206	254	3	27
May	194	111	24	4	171	340	...	82
June	124	169	3	16	72	334	...	86
July	15	60	6	5	25	366	...	98
August	22	105	8	9	60	144	...	41
September	20	11	8	2	8	948	...	8
October	16	14	10	6	37	32	...	8
November	30	6	8	10	32	132	...	48
December	24	7	12	18	18	161	...	58
1871.								
January	36	16	10	11	7	239	...	51
February	77	24	23	6	31	413	...	71
March	84	45	61	13	52	636	...	51
Totals of each for the year ...	795	612	212	106	717	3,999	3	629

(Signed) H. L. WOOLDRIDGE,
Asst. Conservator of South Arcot Forests.

4th May 1871.

B.

Statement showing the Amount of Timber removed from South Arcot Forests on Free Passes issued to Ryots for building and agricultural purposes during 1870-71.

District.	Months.	Bandy-loads of Timber.	Bandy-loads of Bamboos.	Bandy-loads of Firewood.	Remarks.
South Arcot ...	1870.				Head-loads of timber and bamboos are included with these totals at the rate of 20 head-loads to one bandy-load. The Ryots are permitted to collect and take at their pleasure head-loads of firewood for domestic purposes and the like, without free passes. It is estimated that about 3,500 head-loads of fuel are taken out daily in the two talooks of Trinomallay and Kullacoorchi in this district.
	April	14	5	33	
	May	61	11	49	
	June	93	39	3	
	July	46	41	64	
	August	39¼	50	21	
	September	12	4	12	
	October	...	...	3	
	November	13¾	9	56	
	December	11	29	16	
	1871.				
	January	3	1	37	
	February	...	...	70	
	March	27	4	73	
	Totals in Bandy-loads ...	320	193	437	

(Signed) H. L. WOOLDRIDGE,
Asst. Conservator of South Arcot Forests.

4th May 1871.

C.

Statement showing Quantity and Description of Timber, &c., confiscated and sold in South Arcot District during the year 1870-71.

Description.	Number of Bandy-loads.	Number of Head-loads.	Amount realized.	Amount of Contingent Expenses and Rewards to Informers.	Amount credited to Government.
			RS. A. P.	RS. A. P.	RS. A. P.
1st-class Acha, &c.	6½	3½	61 9 0	20 0 3	41 8 9
2nd-class Mumai, &c. ...	4¾	...	14 6 0	2 0 0	12 6 0
3rd-class Junglowood ...	4¼	3	9 11 6	2 9 0	7 2 6
Split Bamboos	...	6	1 0 0	0 5 0	0 11 0
Charcoal	...	25½	2 8 0	0 7 3	2 0 9
Bamboos	3	...	7 12 0	2 12 0	5 0 0
Firewood	3½	56½	9 3 6	1 6 0	7 13 6
Avarum Barks	2	...	24 8 0	12 0 6	12 7 6
Total ...	24	94½	130 10 0	41 8 0	89 2 0

CAMP CHENGUM,
4th May 1871.

(Signed) H. L. WOOLDRIDGE,
Asst. Conservator of South Arcot Forests.

D.

Statement of Forest Offences tried before the several Magistrates in the South Arcot District during the year 1870-71.

Place and Date when Offence was committed.	Offence.	Number of Persons charged.	By whom tried.	Result and Punishment, if convicted.	Remarks, if any, recorded by trying Officer.	Informers.
Cullary ... ... March 1870 ...	Section 379 of Indian Penal Code, Theft.	4	Talook Magistrate of Trinomallay.	Acquitted under Section 255, Civil Procedure Code.	.....	Forest Pygust Rymonkhan.
Chinnasamudrum ... 9th May 1870 ...	Section 426 of do., Mischief.	5	Sub-Magistrate of Chengum.	Convicted; three weeks' rigorous imprisonment.	.....	Ramasawmy Pillay, Volunteer, Forest Office.
Mailchengum ... 3rd November 1870.	Section 379 of do., Theft.	2	Do. ...	Convicted; two weeks' rigorous imprisonment and 10 Rupees fine.	.....	Forest Volunteer.
Purarmanundal ... 8th do. ...	Do. ...	3	Do. ...	Acquitted.	.....	Forest Overseer.
Satha Puttoor ... 24th do. ...	Do. ...	3	Talook Magistrate of Callamabi.	Convicted; 2 days' simple imprisonment.	.....	Forest Peon No. 4.
Porosaputh ... ... 12th December 1870.	Do. ...	3	Sub-Magistrate of Chengum.	Convicted; one week's rigorous imprisonment.	.....	Forest Overseer.
Avariyoor ... ... 31st do. ...	Do. ...	3	Talook Magistrate of Kullacoorchi.	Convicted; ten days' rigorous imprisonment and 2 Rupees fine.	.....	Forest Peon No. 6 since deceased.
Tanganuttum ... 11th January 1871.	Do. ...	1	Do. ...	Convicted; 4 days' simple imprisonment.	.....	Police Constable.
Pareyamoor ... ... Unknown... ...	Mischief ...	1	Sub-Magistrate of Gingee.	Convicted; 10 days' simple imprisonment.	.....	Forest Overseer.
Do. ... ... Do. ...	Do. ...	1	Do. ...	Convicted; 3 days' do.	.....	Reserve Head Maistry.
Mungalapurum ... Do. ...	Theft ...	2	Do. ...	Convicted; 3 Rs. fine.	.....	Reserve Maistry.

CAMP CHENGUM,
4th May 1871.

(Signed) H. L. WOOLDRIDGE,
Asst. Conservator of South Arcot Forests.

APPENDIX H.

MADRAS, 30*th April* 1871.

From

MR. CHARLES G. DOUGLAS,
Assistant Conservator of Forests,
Annamallay and Bolumputty Ranges,

To

MAJOR R. H. BEDDOME,
Conservator of Forests,
Ootacamund.

SIR,— I have the honour to forward my Accounts and Administration Report for the official year 1870-71.

2. *Assumption of Charge.*—Captain H. M. Gosling, late Deputy-Conservator of these forests, left on the 4th of June 1870, when I assumed charge.

3. *Financial Results.*—The total expenditure on behalf of the Annamallay Range under all headings amounts to Rupees 48,916-12-2, while the actual receipts by sale of timber and taxes on licenses, &c., only amount to Rupees 17,168-3-7, which leaves a balance of Rupees 31,748-8-7 against the range.

4. *General Remark explanatory of the same.*—When the highly satisfactory results of 1869-70 are considered the deficit for the year now under review calls for explanation. In the first place, then, I beg to state that I was somewhat unfortunately circumstanced as regarded the opportunities of realizing a profit. The revenue secured last year was largely owing to an accumulation of timber at the foot of Annamallay slip during a period of several successive seasons in which no felling was necessary; thus when the demand arose the timber was at once available for removal to the floating station. Now by the end of last official year the timber at the foot of the slip had been disposed of, and the depôt empty, while at top of ghaut there was not more than 150 pieces of all kinds, thus whatever timber was sold had to be removed from the outlying Forest Depôts to Adivarem, foot of ghaut, and thence to the coast per rail *viâ* Coimbatore or Palghaut stations in time for despatch to Bombay, so as to reach that place within the date which would enable adjustment for the same to be effected within this official year. To render such adjustment at all possible consignments should reach Bombay by the first week in February, and in the Proceedings of Government No. 942, dated 24th June 1870, the Marine of that Presidency stipulate for an earlier delivery (*i.e.*, early in January, if they are expected to make payment within the year. If timber is to be at Bombay by the first week in February, it must leave the Coast Depôt by the 10th January, so that, as the Annamallay working season above ghaut only commences on the 20th day of June and ends on the 20th of December, though perhaps contractors work later if water does not fail, the whole of the carting had to be accomplished within about six months. A sufficient quantity of timber might be worked out perhaps if there was no difficulty about cart contractors, but at present unfortunately this class of men are not over plentiful, nor are they always available; in fact, as a rule, until the best portion of the rainy season is past, and the cultivation nearly over, contractors do not come to work in any number; indeed, even were it not that cultivation called the majority of them elsewhere, the carting of timber over such roads as they have to use would be very severe and slow work in the monsoon. Before the month of October very little carting is performed above ghaut, so that the time I had to work out the timber was certainly not sufficient considering the resources at my disposal, and had it not been for the advantages of speed and certainty consequent on the use of the rail, I could not have handed over any timber until the coming

floating season. Another point to be borne in mind is that the contractors always prefer removing the timber from outlying depôts to top of ghaut, instead of straight through to a railway station. The reason of this is obvious, and the men are quite right; for four months or so they can work above ghaut, and for four more they can work below. If they fail to accumulate enough timber while above ghaut in the healthy seasons to give them employment below ghaut for the other portion of the year, they are prevented from fulfilling their engagements; because, generally speaking, the middle of January is the latest time in which it would be safe to reside above ghaut, as they would have to for three and four days every trip if they were carting from forest depôts; besides this the water fails and the cattle cannot stand it. Provision for each year's sales should always be made in advance, as was formerly done, for without a very large number of cartmen it is impossible to remove timber in sufficient quantities within the time available straight out from forest depôts. I selected the finest logs I could, and removing them to foot of ghaut by Government carts, I despatched them to Palghaut and Coimbatore by contractors, although it was some time before I could persuade them to take such large timber. I succeeded in getting 700 logs to Beypore by the first week in February, when I proceeded and, with the assistance of Mr. Overseer Lloyd, completed the measurements by the 8th of that month. Had Pattamars arrived at this time it is just possible that payment might have been received this year; but as one vessel did not come in until the 25th of February 1871, and the other until the 7th of March 1871, it was quite out of the question to expect an adjustment. There are also other sums unpaid, and the following is a correct statement of the money due to this Range:—

		Rs.	A.	P.
701	Teakwood supplied to the Bombay Marine	42,292	14	4
88	Rosewood logs supplied to do.	3,290	15	8
3	Teak logs to Salem Central Jail	301	0	1
32	Teak sleepers supplied to the Madras Railway Company	300	3	6
	Teak Seed	9	12	0
	Total ...	46,194	13	7

This amount added to the actual revenue gives a total of Rupees 63,363-1-2, or Rupees 14,446-5-0 more than the expenditure incurred. I much regret the falling off in revenue, but it has arisen from causes quite beyond my control; even these results were only attained at the cost of great effort.

5. *Felling.*—About the 15th of June axemen began to arrive from the Palghaut District, and by the 20th a considerable number were in the forest. I have experienced little or no difficulty in procuring a sufficient supply of this kind of labour, but I am inclined to think that skilled hands are not so easily obtained under existing circumstances as formerly. It may be that the men find other and more congenial work in their own district; it is also quite possible that the present system of contracting is to blame. In former years, I believe, it was customary to advance money to each axeman individually in the presence of a Magistrate; every man thus engaged becoming directly interested in the performance of the contract. Now, however, one man is chosen as a contractor, who, for a certain sum, agrees to prepare so many logs; he provides the labour, and is personally responsible, the workmen receive their pay from him, and have nothing to do with the department. There may be advantages in this plan, but I suspect that these contractors do not generally offer sufficient inducement for really first-class axemen to join these gangs; another point is that we may fine the contractor as much as we like, but the punishment for bad work thus falls very possibly on a man willing to do his duty, and certainly not on the real culprits, the axemen, whereas, were they to work with the knowledge that their profits depended on their own exertions, and that they would suffer for inferior work, we should soon, I think, see a decided improvement. The men who turned out the best planks during the season now under notice were generally those who were independent of the contractors, and working on their own account. There is one other explanation of the planks not being equal

in dimension and quality to those of seven or eight seasons ago, namely, the scarcity of the large and sound trees. In measuring the planks I have of course had opportunities of observing the distances between the stumps, and judging from that, there certainly appears some difficulty in finding trees of ten feet girth and upwards. This is not to be wondered at considering that the locality where felling was conducted this year was the scene of felling operations for a number of seasons in the leased forests. As Captain Gosling remarks in his report for 1869-70, very fine timber is no doubt abundant on the other side of that forest, but it would not be advisable, I think, to commence felling there until the wood in depôts on this side has been carted out; at least it would be very difficult for one officer to supervise efficiently the carting on the Annamally side and the felling in the Takeddy jungle. It is not at all to be regretted, however, that felling was confined to the former portion of the forest this year, because the timber now secured thereby would doubtless have deteriorated, moreover a number of trees which were of bad growth and otherwise useless have been converted into crooks, &c., for the Bombay Dockyard. The total number of Teak planks, crooks, &c., prepared this season is 2,246, of these 2,172 were the production of 362 trees cut in the Numboodies leased forest, and seventy-four the result of ten trees felled in Government forest proper by mistake at the commencement of the season. With the exception of twenty-six planks no Rosewood has been felled, of these seventeen were from three trees cut in leased forest, the rest in Government forest.

6. *Elephant Labour.*—In addition to the Government Establishment of four elephants, I engaged on different occasions and for various periods the services of six others. The Government elephants dragged 2,074 logs, &c., old and new, at a cost of Rupees 1-8-7 per log, or at about the rate of Anna 1 and Pies 7 per cubic foot. Besides this, forty days' work throughout the season were obtained at sundry jobs, such as bridge-work, &c. They were employed also for some time in reforming and packing depôts, both old and new. In estimating the value of this work I have followed Captain Gosling's plan of calculating each day's labour as equal to the cost of hiring elephants; I think nevertheless that his allowance of Rupees 10 rather high, for our animals would hardly bring more than Rupees 7. The very best elephants in this neighbourhood can be hired for ten.

				RS.	A.	P.
Value of work per at Rupees 7 per diem				4,410	0	0
Cost of maintenance	1st.—Feed and keep	2,516	3 10	3,195	15	2
	2nd.—Pay of Establishment	679	11 4			
Balance in favour of Establishment				1,214	0	10
Deduct Fouzdar's salary at Rupees 25				300	0	0
Saving effected ...				914	0	10

The cost of hiring the elephants alluded to above amounts to Rupees 822-8-0, and the roster of work shows that they dragged 433 logs, &c, *i.e.*, at the rate of Rupees 1-14-4 per log, or supposing the logs to contain on an average fifteen cubic feet, they may be said to have dragged 6,495 cubic feet at the rate of Annas 2 per foot. It should be mentioned that the elephant work was this year very hard, the distances were long, and some of the crooks prepared for the Bombay Marine of immense size. I regret to say that a very fine Tusker, a hired elephant, and quite the best of any at my disposal, suddenly became unmanageable, broke away, and was at large for about ten days; he was then shot in the foot and captured. This delayed operations for a time, as of course he spread a panic amongst my labourers; he did very little damage however, beyond upsetting the huts of the mahouts and kavadies, and breaking into the store. Some contractors came to me one day saying that he had destroyed their carts, but when I went to see I found he had upset a number, but had only broken one, and before he returned to the spot the bandymen very wisely took their carts to pieces. The delay was of far more importance than any actual damage perpetrated, and I was afraid that many of the axemen who ran off would not return, but fortunately every thing resumed its usual course after his capture.

7. *Carting above Ghaut.*—The total number of logs and planks removed from the forest depôts to top of ghaut and Adivarem (*i.e.*, foot of ghaut) amounts to 2,184 Teak and Rosewood included, of this number 719 old Teak, very fine logs, were conveyed by Government carts, 906 were removed by advanced contractors, of which 531 were old planks and 375 of this year's felling, unadvanced contractors removed 465 new Teak planks and ninety-four old.

8. *Carting below Ghaut.*—The total number of logs conveyed to Pothanore and Palghaut Railway Stations is 749 logs, containing 22,223 cubic feet 10 inches 4 parts, of these 348 containing 10,561 cubic feet 2 inches 2 parts were removed by Government agency, and 199 containing 5,415-6-11 cubic feet by contractors under advances, while those who received no advance carted 202 logs containing 6,247 cubic feet 1 inch 3 parts.

9. *Government Cart Establishment.*—The services of this establishment are most valuable, and I would almost recommend increasing it. It acts as an admirable check on contractors, and by the addition of more cattle would nearly render the department independent of their aid above ghaut. The advantages contingent in having a good and effective concern of this kind available can only be appreciated in a range like this, where it is so difficult to obtain contractors for removing our timber. The establishment, for the most part, consists of remarkably fine bullocks, and I am glad to be able to say that they are all in first rate condition. The principal expense connected with its maintenance is the supply of straw during the hot months, and in having to keep a certain number of carpenters at work for the repair of carts. I hope to be able to reduce expenditure considerably under both these headings next year. Since I have been in charge of the range a roster of work performed has been opened, by which we are able to judge of the propriety or otherwise of retaining such an establishment. The valuation of work is as follows, and includes all expenses connected with the establishment, such as repair of carts and cost of refuse timber expended on the same :—

	Rs.	A.	P.
461 old Teak logs from Kurrian Sholah to foot of ghaut, containing 14,870 cubic feet 10 inches 1 part, at Annas 2 per cubic foot	1,858	13	8
118 old Teak from Pooliaddy to foot of ghaut containing 3,796 cubic feet 5 inches 10 parts, at Annas 3 per cubic foot	711	13	5
95 old Rosewood logs from Kurrian Sholah to foot of ghaut, containing 2,470 cubic feet, at Annas 1½ per cubic foot	231	9	0
45 old Rosewood logs from top of ghaut to foot of ghaut containing 585 cubic feet, at Pies 6 per cubic foot	18	4	6
18 Teak from top of ghaut to Palghaut, containing 532 cubic feet, at Annas 4½ per cubic foot	149	10	0
3 Teak from Adivarem to Pothanore, containing 116 cubic feet at Annas 4 per cubic foot	29	0	0
252 Teak from Adivarem to Pothanore, containing 8,193 cubic feet 2 inches 3 parts, at Annas 4 per cubic foot	2,048	4	9
75 Rosewood from Adivarem to Pothanore, containing 1,719 cubic feet 2 inches 2 parts, at Annas 4 per cubic foot	429	12	8
Total ...	5,477	4	0
Deduct Expense of Establishment ...	5,035	0	8
Balance ...	442	3	0

10. *Results of the reintroduction of Advances to Cart Contractors.*—I regret to say that this experimental measure has not succeeded to the extent anticipated by Captain Gosling. It is true that numerous tenders were made for contracts, but most of these had to be rejected on consideration for various reasons. In no case did I receive proposals from men of any standing or responsibility, and although due notice was given throughout the districts of Palghaut and Coimbatore inviting offers and giving full particulars as to the amounts of advances to be made,

it failed to attract the sort of men whom Captain Gosling appears to have been confident it would induce to come forward. The explanation of this is I think, first, that the two classes of men of means in the neighbourhood, viz., Wood Merchants and Ryots, have their own affairs to attend to, and it would not be worth their while to relinquish their own business for the sake of a Rupees 1,000 advance any more now than formerly; in fact, I am rather inclined to believe that these people, who are really men of substance, would prefer to work without advance if they cared to be employed by Government at all. During the season just past my best contractors were men under no advance, and I have every hope that they will volunteer next year. One other point is that the abolition of advances some years ago had the effect of dispersing many men who were in the habit of carting timber regularly for the department. The total amount advanced by me was Rupees 4,130, and Rupees 2,611-4-0 have been worked out, leaving a balance of Rupees 1,518-12 0 outstanding. This is most unsatisfactory, but at the same time I must observe that I consider that there is no fear whatever of the money not being cleared off. There has been no attempt to defraud Government, and although the amount of outstandings leads to the inference that the terms of the agreements could not have been complied with, I can bear testimony to the men having worked hard and remained in the forest until it was impossible for them to stay any longer. I have now resolved to use every effort in persuading men to give their services in future without advance, and though not over sanguine, still I have reasons for believing that by going personally to the neighbourhoods where the bandy-men reside, offering fairly liberal terms and prompt payment for works performed, I might succeed to a considerable extent. I venture to hope, however, that Government will permit me to use my discretion in the matter of advances. With the experience I have this year gained, and with the nucleus for a future supply of this labour which I think I have now formed, I am certain that, with care and judgment, advances might be most profitably made.

11. *Regarding old Outstandings.*—As stated in Captain Gosling's report for last year, the prosecution of defaulting cart-contractors was entrusted to Mr. Overseer Lloyd and Assistant Overseer Mooroogasem Pillay. They have been able to trace none of the parties whose contracts they hold; however, they may be more successful within the next month or so when there is less forest-work on hand; so far as I can ascertain I should say there would be great difficulty and delay in recovering the money.

12. *Planting Operations.*—Five acres of jungle have been felled and cleared, and will be planted with Teak when the proper time arrives. The site chosen is adjoining the small opening of 1,860; it is, indeed, a simple enlargement of that plantation; the soil seems well adapted for growing Teak, and being near the ghaut a large plantation might be opened with advantage. If it should be considered advisable to carry out any such plan, I would suggest the addition of a special Overseer to the establishment with a staff of subordinates according to the views entertained as to the extent of ground desirable to plant. I anticipate considerable difficulty, however, in securing the requisite quantity of local labour. It is impossible, as you are no doubt well aware, to get any coolies to reside permanently in the forest above ghaut when felling and clearing jungle, &c., would be carried on, so that we are dependent on the Kaders and Mulcers, neither of them to be trusted to follow any industry longer than it happens to suit their caprice. A spot has been selected for the formation of a nursery close to the plantation, and a well is now being sunk, in order to obtain a regular supply of water during the dry weather.

13. *Precautions against Jungle Fires.*—The work of clearing brushwood round forest depôts has this year been a heavier task than for some seasons past, owing to the increase of our stock. Newly felled Teak is so inflammable that the greatest vigilance is necessary to preserve it from fire. Before the usual fires had commenced I supervised the clearing and burning of brushwood, and was able to satisfy myself of the safety of new depôts. The sweeping out of leaves being all that was now necessary, was entrusted to the Head Overseer, who was constant in his attendance to the duty.

14. *General Remarks on the substitution of rail for water carriage.*—A new and important feature in the working of this range now calls for a few remarks, viz., the substitution of the railway as a means of conveying timber to the coast, for the old system of floating it down. In last year's report a statement will be found, in which is shown the cost of the two methods, and the result arrived at is that in removing 611 logs, containing 14,664 cubic feet, a clear saving of Rupees 562-13-0 is effected by utilizing the railway. This alone would, I presume, be sufficient to entitle the plan advocated to thorough approval, putting aside advantages of speed, safety, and punctuality; but as there are some points in the statement regarding the accuracy of which I have my doubts, I propose to reconsider the calculations on which the statement is based, and with a view to facilitate the inquiry I have appended several other statements to this report connected with the subject. The first point upon which I have to raise an objection is the saving of cart-hire, which the statement shows in favour of the route to Pothanore. In Appendix A. 1, which is an exact copy of the statement in last year's report, it will be seen that, whereas Rupees 5-8-0 are charged against logs conveyed to Mungara, only Rupees 4 is shown to be the cost of carting to Pothanore Railway Station. This is, indeed, the keystone of the whole advantage claimed for the new route; a reference to Appendix A. 2 will show that when the rates of cart-hire are altered the concessions of the Railway Company fail to remove the extra expense which must generally be an obstacle to its use as a means of transporting timber from one place to another where water carriage is at all available. I think Captain Gosling was premature in calculating the cost of carting to Pothanore at so low a figure. The books show that he carted a few logs to that station, but they were not of the cubical contents specified in the statement, and he paid from Rupees 4 to 5 per load. It would not, I am sure, pay contractors to cart heavy logs at that rate. The hire of an ordinary baggage cart from Pothanore to foot of ghaut is within a fraction of Rupees 4. Last season I hung back as long as I thought safe in the hope that contractors would give in when they found I was determined, but from first to last they scouted the idea of carting logs at Rupees 4 a load. Another reason which appears to me a valid one for objecting to the rate of Rupees 4 viâ Polachy to Coimbatore is the fact that in the contract referred to in paragraph 4 of last year's report the rate fixed for conveying timber to Palghaut is Rupees 6-4-0 per load, this, at the rate of Annas 12 down the ghaut, leaves the old rate of Rupees 5-8-0 between Adivarem and Palghaut. Now as Palghaut is not further from Adivarem than Pothanore, and as for one contractor who would cart to Pothanore six would prefer Palghaut. I am sure that if there were any particular benefit in sending the timber to Pothanore instead of to Palghaut, we should have to pay as much if not more, in order to get enough men to go there, or at least so long as the higher rate of Rupees 5-8-0 appertained to the Palghaut route, it would be hopeless to expect men to go to Pothanore for Rupees 4, being, as most of our contractors are, people of the Palghaut District, who would naturally prefer working through their own villages, where they were known and could more easily make arrangements for foddering their cattle. It will be found, then, on reference to Appendix A. 2 that when we equalize the rates of cart-hire, as I feel certain we are justified in doing, that so far from there being any saving over the old route there is a small balance in its favour; but even under these circumstances I would agree with Captain Gosling that the other advantages enumerated would more than compensate for the actual extra expense, were it not that there is another point of importance that must not be overlooked, viz., that while 600 logs or so may, without incurring much additional expense, be conveyed by rail to the coast when we calculate the cost of removing *double* that quantity, the difference in favour of floating becomes too great to be passed over. In Appendix A. 3 it will be seen that this amounts to Rupees 2,129-6-0 as I have already indicated. The whole secret of the difference between my calculations and those of Captain Gosling lies in the rate of cart-hire to be fixed, for the concessions of the Railway Company are not sufficient to balance the scales when we come to weigh the advantages attendant on either route. In conclusion, I beg to observe that, having gone carefully over the correspondence between the late Deputy-Conservator and the Railway Company, I find that, although some of their concessions

do not apply to timber consigned to any station save that of Coimbatore, it would be nevertheless more economical to send the timber viâ Palghaut, though there is a toll to be paid on each bandy of Annas 3 and sundry other expenses which will be found in Appendix A. 4. From this statement, and from Appendix A. 5, it will be seen that 611 logs of the same dimensions, as already calculated, may be sent to Beypore at a cost only exceeding that attendant on floating the same logs viâ Mungara to Ponany of Rupees 51-15-0, and that double that quantity of timber might be sent down at a cost only exceeding the floating route by Rupees 1,565-14-0 instead of, as in the case of Coimbatore, by Rupees 333-11-0 on 611 logs and Rupees 2,129-6-0 on 1,222 logs. As this is the first season in which the railway route can be said to have been thoroughly tested, and as it was to a certain extent regarded as an experiment, I have deemed it necessary to report fully on my experience of its working. As regards Coimbatore the whole matter hinges on the question of cart-hire, and although Captain Gosling might have been able, from his greater knowledge of the district, to have carted to Coimbatore cheaper than I could, I have ample grounds for doubting if he would have succeeded in getting away more than a very few inferior logs at the rates he expected: a certain number of logs might be sent to Beypore viâ Palghaut now and then in the event of a bad floating season, or if for any other reason we were anxious to get them to the coast speedily; but there is no necessity for any establishment at Beypore, and the logs could be accumulated at Palghaut until we were ready to load. Palghaut being the head-quarters of the Overseer in charge of the Chenutnair forest, there would be no occasion for any extra establishment there either beyond a temporary Peon for the time that the timber was being collected.

15. *Contemplated Operations.*—It has been decided that, considering the large stock of Teak now in depôt, and the withdrawal of Bombay Indent for 1871-72, no felling of that timber need take place next year; but that about 10,000 cubic feet of Rosewood should be prepared for the Madras and Bombay Gun Carriage Manufactories, all my energies, therefore, will be devoted during greater part of the season to carting out timber. I trust also to be permitted to extend planting operations. If I am fortunate enough to secure a number of cart-contractors I purpose holding large auction sales at Coimbatore and Annamallay. I believe also that a good market could be found at Madras for our Rosewood rejected by the Madras Gun Carriage Manufactory. I am now doing my utmost to reorganize the carting of timber to Mungara, where I hope to have a good number of planks before the freshes commence. I would suggest also that 650 or 700 planks of Teak be sent to Beypore for Bombay via Palghaut; we shall by this means gain more time, for I fear it is now impossible to convey the quantity of timber to Mungara by the end of July sufficient to raise the necessary revenue. The Timber Depôt at Ponany has been re-engaged, and the Mungara Depôt will, in a few days, also be hired at a slight increase on the former rent. I have given orders for a Goomastah to be posted temporarily to Mungara to look after the timber brought in there; his pay will be only Rupees 10 at present, and orders have been given for the removal of the Beypore Establishment to Ponany. It will be difficult, however, to resume the old routine this season to the extent desirable now, that it has once been dropped, especially as I have been unable until the very last to adopt any measures towards that end. There are also several matters connected with the management of the jungles worked on the license and voucher system, to which I hope to be able to devote a due share of my attention. There is every likelihood also of survey and demarcation being made of the tract of low land forests now under dispute and claimed by the Numboody of Colongode, if this is done it will greatly tend to facilitate the task of keeping down illegal felling.

16. *Health of the Establishment.*—The health of the establishment remained good until towards the end of the working season, but after the breaking up of the camp, fever became rather prevalent, while dysentery also made its appearance, but I do not know that there was more illness than usual. I did not leave the forest above ghaut until ten days after regulation date, which perhaps was the cause of a few extra cases of fever. I think, however, that if better huts were erected at Toonacadavoo, the people would be more contented and healthier. It is perhaps owing to the protection of a rough, but substantial timber hut which I put up at the beginning of the season that I have enjoyed such good health as I have, I hope to be able to

provide better accommodation for the whole establishment in the ensuing year. I have to report the death of Assistant Overseer Mooroogasem Pillay, the Fouzdar Shaik Davood, one Mahomedan, and Peon, all from fever.

17. *Concerning the Establishment.*—It would appear customary in these reports to pass a few remarks relative to the subordinates of the Range Establishment. I have, on the whole, reason to be satisfied with the assistance I have received from my own. Some inconvenience has arisen from time to time owing to the fact of several members composing it being too inexperienced for the duties of the posts to which they had been nominated. In November my Head Overseer was transferred to Nellumboor and replaced by Mr. W. Taylor from Ootacamund—an exchange which, in justice to that Overseer, I must say he has given me no cause for regretting. He has as yet invariably shown himself both desirous and capable of getting through his work with promptness and accuracy. The conduct of Assistant Overseers Mootoosawmy Pillay, Syed Gholam, Shuffee Saib, and Mooroogasem Pillay merits favourable mention. The death of the last named Overseer is to be regretted; he was most energetic and industrious, and appeared fully to deserve the high opinion which Captain Gosling, the late officer in charge, entertained of him.

18. *Conclusion.*—From the foregoing report it will be seen that 375 trees,* Teak and Rosewood included, have been felled, producing 2,272 planks, crooks, &c.; that 2,507 logs and planks, old and new, have been dragged into depôts; and 2,184 ditto carted from outlying depôts to top of ghaut, while 749 of these have been conveyed down ghaut to the railway stations. In addition to this the usual road repairs were attended to, the expense of which was materially increased by very heavy floods which occurred in September. About three miles of old road were also reopened, in order to render the outlying depôts in the leased forests, where felling was principally carried on, accessible to carts. Blasting was also necessary in several rocky places on the ghaut and new road; these, together with the commencement of the small plantation referred to in paragraph 12, complete the operations for the past year in the Annamallay Range.

* 363 Teak and 2 Rosewood from the Numboodies forests amounts to Rupees 2,190, stump fee recovered from the money advanced him.

Bolumputty, Sholakurray, and Chenatnair forests.—In the first of these ranges, which are all worked from the same fund, no forest operations have been carried on. Some fine Rosewood logs, which were selected for the Madras Gun Carriage Manufactory several years ago, are still lying in the forest. An effort was made to remove them this year, but failed, as the ground over which elephants have to drag them is very bad indeed, so that, owing to this and the unusual size of the logs, I had to abandon the attempt as no elephant owner would undertake the job.

Sholakurray forests—felling and slipping.—274 cubic feet of Vengay, 52 of Teak and Rosewood, and 21 pairs of spokes and felloes have been felled and dragged from the hills by coolies.

Carting.—Forty-two cart-loads of Vengay have been conveyed from the foot of the Sholakurray Hills to the Walliar Railway Station, and thirty-two loads of Teak and Rosewood from the Walliar Forest Depôt to the same place. The Walliar Fuel Reserve and the opening of two new plantations having engaged the best energies of the Overseer, is the reason why so little has been done in the forests.

Walliar Reserve.—Although operations were commenced in good time this year, the success is not what could be desired. 75,100 pits were dug and planted with Mango, Tamarind, Illipi, Poongum, and Babool, of these Tamarind and Poongum have thriven best; but failure of rain, the unusual heat during the last four months, and the attacks of a species of borers in August last have all conspired to retard the growth of the plants and raise the percentage of failure. 43,000 teak saplings have been pruned and cleared of all brushwood and creepers likely to injure them; there is still a considerable number of saplings in the reserve requiring attention of this kind. On the east, west, and north sides a firepath was cleared of twenty yards broad, and on the south this was increased to sixty yards to obviate the chances of fire arising from sparks blowing from the engines passing along the lines which bounds the reserve on that side. These precautions proved sufficient, and no fire made its way into the reserve.

Forest Plantation near Walliar.—This plantation, situated on the Sholakurray Hills, was opened last year. It contains at present 7,000 plants of Teak, Rosewood, Nella Naga, Vengay, and Irul, all of which are of spontaneous growth ; and having been properly cleared and preserved from the encroachments of fire, they are healthy, vigorous saplings. No additions have been made to the plantation this year, but it is of importance that steps be taken to encourage and protect the growth of young forest on these hills.

Olanacode Fuel Plantation.—This is a small block of land about half a mile from the railway station which, with the sanction of the Collector, I had intended to convert into a Fuel Plantation. Trenches had been dug partly round the boundaries, and about 10,000 pits dug, when a dispute, as to who the legal proprietor of land was, having arisen the work was suspended, and has not yet been resumed.

Nochupully Fuel Plantation.—This is situated within six miles of the Palghaut Railway Station ; fifty-six acres have been planted, and Mango, Illipi, and Poongum seedlings appear to thrive ; 67,012 pits were dug ; clearings were made both in and around the plantation, which kept it free from all fire. There is a considerable quantity of fuel now available within the boundaries of Nochupully.

Pulliampilly Block.—This piece of land contains about 200 acres, and there is, according to Mr. Overseer Lloyd's estimate, 3,000 loads of fuel now within that area, and about 4,000 more obtainable from the slopes adjoining. No planting has been carried on. The distance from the railway station of Palghaut is nine miles, while it is only five miles from Purly station further down the line.

Financial Results.—The expenditure on account of these forests has been chiefly in connection with plantations and reserves ; the Overseer could not properly attend to any other extensive operations ; the consequence is that we have only the Bolumputty seigniorage collections in the Coimbatore District and a few small sales to show as revenue ; there is besides, however, a sum of money still due on account of sales to Bombay, despatched at the same time as the Annamallay timber. The total expenditure is Rupees 9,363-10-0, and the actual receipts 4,073-13-2, leaving a balance against the forests of Rupees 5,289-12-10. The amount due for timber supplied this year is Rupees 1,519-2-0, which reduces the deficit to Rupees 3,770-10-10.

Of the Establishment.—It affords me much pleasure to bear testimony to the zeal and activity displayed by Mr. Lloyd in the discharge of the duties entrusted to him. He has been in charge of the Palghaut District Forests and Reserve, &c., throughout the past year. The Bolumputty forests proper are in the Coimbatore District as already explained. Nothing has been done in the way of felling or carting. The Assistant Overseer in charge, Sooboroyaloo Chetty, was formerly Clerk in the Annamallay Establishment, and was appointed to his present post by Captain Gosling just before that officer left. He is without experience of jungle-life and forest-work, but I believe him to be steady and industrious.

I have the honour to be,

Sir,

Your most obedient servant,

(Signed) CHARLES G. DOUGLAS,

Asst. Conservator of Forests.

Register of the Forest Offences tried before the several Magistrates in the Annamallay and Bolumputty Ranges during the official year 1870-71.

Place where and Date when Offences were committed.		Offences.	No. of Persons charged.	By whom tried.	Result and Punishment, if convicted.	Remarks, if any, recorded by trying Officers.	Informer.
Mungarah Forest...	1st April 1870...	Theft, Mischief...	1	1st-Class Sub-Magistrate, Pollachy.	Discharged for want of proof.	.....	Assistant Overseer Mooroogasem Pillay.
Koodingaim Forest.	Do. ...	Theft	2	1st-Class Sub-Magistrate of Oodoomala-pettah.	1st prisoner fined Rupees 10, the 2nd dismissed.	.....	Do.
Dali Forest ...	Do. ...	Do. ...	9	Do. ...	Fined Rupees 4 each.	.....	Vengalappa Naiken, Monigar.
Mungarah Forest...	30th April 1871.	Do. ...	1	1st-Class Sub-Magistrate of Coimbatore.	Dismissed.	.....	Do.
Maroodamala Forest	24th April 1871.	Do. ...	10	Do. ...	Each sentenced to one day's rigorous imprisonment.	.....	Do.

(Signed) CHARLES G. DOUGLAS,
Asst. Conservator of Forests,
Annamallay and Bolumputty Ranges.

Madras, 30*th April* 1871.

APPENDIX I.

OFFICE OF THE DEPUTY-CONSERVATOR OF FORESTS,
OOTACAMUND, 29*th April* 1871.

From

LIEUT. COLONEL H. R. MORGAN,
Deputy-Conservator of Forests, Mudumullay, &c.,

To

MAJOR R. H. BEDDOME,
Conservator of Forests,
Ootacamund.

SIR,—I have the honour to forward the Annual Report of the forests under my charge for the official year 1870-71.

2. The total expenditure amounts to Rupees 63,388-13-3, and the returns to Rupees 54,759-4-2, showing a loss of Rupees 8,629-9-1 for the year, with wood in store valued at Rupees 1,65,992-7-9. Rupees 9,000 paid into Treasury in March, but not credited till April.

3. *Mudumullay Forest.*—The operations in this forest have been conducted for a portion of the year by Overseer Iyasawmy Naick, who has suffered much from fever.

4. *Sawing Timber.*—But little timber has been sawn consequent upon the sawyers having run away.

5. *Dragging Timber.*—But 7,717 cubic feet of Teak and Vengay have been dragged from the forest to depôts, only one elephant having been employed, the other two were sent to the Collegal Sandalwood Plantations. I may mention that the elephant wounded last year recovered perfectly, and has been ploughing for some time.

	RS.	A.	P.
Feed and keep during the year...	739	6	0
Deduct work done...	528	8	7
Balance against ...	210	13	5

6. *Carting Timber.*—During the past year twenty-five pairs of bullocks and carts have been employed in carting timber from the far depôts in the forests to the Karkana, &c., depôts. 46,196¼ cubic feet have been carted, which, at contractor's rates, amount to Rupees 7,503-3-0, against their feed and keep of Rupees 4,054-0-6, leaving a small surplus to cover the wear and tear of carts and bullocks.

		RS.	A.	P.
Bennai to Mudumullay... ...	... 33 826 =	4,165	14	6
Do. to Sultan's Battery ...	... 1,489 =	559	9	6
Mootheuthodu to Goodaloro ...	... 1,462 =	365	8	6
Mudumullay to Tippacadu ...	... 542 =	67	13	0
Mootheuthodu to Mudumullay	... 9,377¼ =	2,344	5	6
		7,503	3	0
Feed and keep of bullocks ...	... 46,196¼ =	4,054	0	6
Balance in favour ...	=	3,449	2	6

7. This year there was again murrain amongst the contractor's bullocks at Musnicoil, but not a case occurred in the forests.

8. *Roads.*—The main line of road, with its feeders, has been kept in a good state of repair, and carting has gone on uninterruptedly from November to April.

9. *Teak Plantation.*—The twenty acre teak plantation, commenced in 1864, continues to progress favourably. The plantation at Bennai, ten miles west, consists of 10,000 plants; the two year old plants are eight feet in height; last year's planting one foot; the tree grows faster and straighter than at Mudumullay, and could labour only be depended upon, one hundred acres annually should be planted at present: such is the scarcity of labour that we cannot venture upon more than 12,000 trees annually. As the plantation must be weeded for the first three years, not to do so is simply to throw away the money already spent. Unfortunately, owing to stumps and roots, animal power cannot be employed.

10. *Criminal Prosecutions.*—There have been no criminal prosecutions.

	Cubic feet.	Rs.	A.	P.
From the Ooty Depôt	1,543⅔ =	2,700	12	10
Do. Musingoody Depôt	173¼ =	72	0	0
		2,772	12	10
Seigniorage on Teakwood	6 0 0			
By Firewood, &c., Contractor	100 0 0			
		106	0	0
Total Revenue ...		2,878	12	10

11. *Sale of Timber.*—Timber sold to the public amounts to Rupees 2,772-12-10, which, together with the amount of Rupees 106 realized by seigniorage on bamboos, &c., has been carried to forest-revenue.

	Cubic feet.	Rs.	A.	P.
From Ootacamund Depôt. Lawrence Asylum Works ...	2,991 =	5,982	0	0
Wellington Workshops, &c, ...	416 =	832	0	0
Various Bridges	292½ =	585	0	0
Stock	222 =	444	0	0
New Church	153¼ =	307	8	0
Miscellaneous Works	415½ =	831	8	0
	44,491 =	8,982	0	0
From Mudumullay Depôt. Vythery Bridge ...	... 1,212$\frac{5}{6}$ =	1,392	10	4
Bridge Work, &c. ...	... 1,646 =	1,930	13	0
Total Cubic feet supplied	... 7,349$\frac{5}{6}$ =	12,305	7	4

12. *Supply of Timber to Department Public Works.*—The quantity of timber supplied from the Ootacamund Depôt to the Lawrence Asylum, &c., on the Neilgherries amounts to 4,491 cubic feet, and that supplied from the Mudumullay, Karkana, and Tippacadu for the Vythery bridge, &c., amounts to 2,858$\frac{5}{6}$ cubc feet, or making a total of 7,349$\frac{5}{6}$ cubic feet = Rupees 12,305-7-4, which has been adjusted on receipts from time to time.

13. *Stock of Timber on hand.*—The quantity of timber to be accounted for is 160,007⅔ cubic feet lying at the various depôts which, at different rates, amounts to Rupees 1,40,524-2-0 as hereunder particularized:—

	Rs.	A.	P.	Rs.	A.	P.
Value of timber on 1st April 1870				1,46,502	8	0
Add timber felled in 1870-71				9,567	6	2
				1,56,069	14	2
Deduct timber supplied to Public Works Department as per paragraph 12	12,305	7	4			
Do. do. sold to the public as per paragraph 11 ...	2,772	12	10			
Do. do. destroyed by fire and white-ants	467	8	0			
				15,545	12	2
Balance on 1st April 1871				1,40,524	2	0

Particulars of the Balance.

			Rs.	A.	P.
92,942⅔	Cubic feet of Teak in forest,	at Rs. 0-12-0 ...	69,707	0	0
52,429½	do. of do. in Tippacadu,	at Rs. 1- 0-0 ...	52,429	8	0
2,898	do. of do. in Musingoody,	at Rs. 1- 0-0 ...	2,898	0	0
4,233¼	do. of do. in Seegur,	at Rs. 1- 0-0 ...	4,233	4	0
7,504¼	do. of do. in Ootacamund,	Rs. 1- 8-0 ...	11,256	6	0
160,007⅔			1,40,524	2	0

14. *Unadjusted Advances.*—The outstanding advances remaining to be adjusted amount to Rs. 4,141-10-7, of this amount Rs. 2,665-13-6 is for the work-people, the balance grain in store.

	Rs.	A.	P.
Out of old Advances	...	...	...
Do. new Advances	4,141	10	7
Total			

15. *Health of the Establishment.*—The health of the Forest Establishment has been much as usual; fever, dysentery, ulcers, and sore-eyes are very prevalent.

16. In summarizing the operations for the past year, I would observe that the financial result is unsatisfactory, consequent upon the stoppage of public works; but that, possibly, the Mysore

railway will this year require a great deal of our timber, as the Mysore Forest Department have very little seasoned timber on hand. It was too late in the year to sell our wood by auction in Mysore. The order for an experimental wood-yard having only reached me in December last, I was unable to cart more than 6,000 cubic feet to Mysore, and even when this quantity was offered for sale in March merchants refused to buy, giving as a reason that the Mysore authorities had again imposed the tax of 3 Rupees a log, which the Governor-General, Lord Lawrence, had ordered to be taken off. Some ten thousand cubic feet of Wynaad wood was also refused on the same grounds. It appears that in Mysore Madras logs are taxed 3 Rupees, Coorg logs 1 Rupee, and Mysore logs nothing. This is manifestly unfair and impolitic, for in Bangalore no tax is charged; further if Madras wood is to be charged 3 Rupees a log, Madras horses in Mysore should be charged three times as much as Mysore horses; and why Coorg logs should escape with a tax of only 1 Rupee is to me a mystery, as Coorg is just as much a foreign state to Mysore, as Madras is.

17. *Seegur and Suttiamungalum.*—Forests worked by the Overseer. These forests during the past year have been carefully worked and conserved by Overseer Appavoo Moodelly.

18. *Jungle Conservation.*—The quantity of Sandalwood felled and stored in depôt amounts to 3,516½ Maunds, valued at Rupees 10,549-8-0.

19. *Principal Operations.*—During the past year felling Sandalwood and forming experimental plantations. The usual conservation of the forests has been carried out.

*1,056 Maunds from Forest to Depôt.

20. *Dragging Timber.*—Buffaloes have been employed in dragging* Sandalwood roots and trees.

21. *Sandalwood Plantation.*—The experiments in the Sandalwood Plantation are still carefully carried on. 3,400 plants have been put out during the past year at a cost of Rupees 731, including the keeping up of the old plantation. The total number of plants is 33,400. The plants still continued to grow well, and now that the best way of growing the tree is settled; this plan will be adhered to, viz., to grow the trees in lines seven feet apart for the purpose of affording space for ploughing in between. The trees to be six feet apart in the lines. It would perhaps be better to have put them four feet apart, but then watering would have been very expensive. To save gaps by failures three plants are put close together; at the end of two years two are removed and one left. The plants require watering for the first year if water is available. They may be watered the second year with advantage. The tree does not transplant well after it is three months old. We generally lift the young plants with a ball of earth when six inches high. We only sow seeds in the pits.

22. *Trespass committed.*—There has been no trespass in this talook during the past year.

23. *Health of the Establishment.*—There has been much fever; two Peons have died.

24. *Unadjusted Advances.*—There is no outstanding remaining to be adjusted.

	Rs.	A.	P.	
Seigniorage on Teakwood ...	100	0	0	
Do. on Junglewood ...	950	0	0	
Do. on Blackwood ...	170	0	0	
Do. firewood, bamboos, charcoal and Valum bark rented	1,014	4	8	= {Firewood 900 tons. Bamboos 200 loads.
Do. on Achawood ...	5	0	0	
Miscellaneous	144	8	0	
	2,383	12	8	
Sandalwood from the Depôt ...	14,000	0	0	
Total Revenue ...	16,383	12	8	

25. *Sale of Timber.*—The amount of wood sold by license amounts to Rupees 2,383-12-8, Sandalwood sold to merchants to Rupees 14,000 in all making a total of Rs. 16-383-12-8, which has been carried to the credit of the forest.

26. *Supply of Timber to Public Works Department.*—Only two cartloads of junglewood have been supplied, the value of which is Rupees 6.

27. *Stock of Timber on hand.*—The stock of timber unaccounted for is hereunder particularized at different rates, it amounts to Rupees 13,715-14-9.

				Rs.	A.	P.
Value of timber unaccounted for on 31st March 1870 ...				17,141	6	9
Add timber felled in 1870-71				10,749	8	0
		Total ...		27,890	14	9
Deduct value of timber sold as per paragraph 25.	14,000	0	0			
Do. destroyed by fire and white-ants.	175	0	0			
				14,175	0	0
Balance unaccounted for on 31st March 1871 ...				13,715	14	9
Particulars of the balance :—						
2,066¾ Maunds of Sandalwood, at Rupees 3 per Maund	5,106	14	0			
4,732⅜ Cubic feet of Teakwood, at Rupee 0-10-0 per cubic foot	2,957	11	9			
596⅜ Cubic feet of Blackwood, at Rupee 0-12-0 per cubic foot	447	4	6			
1,534⅞ Cubic feet of Vengaywood, at Rupee 0-6-0 per cubic foot	575	9	3			
2,524⅜ Cubic feet of Benteak, at Rupee 0-7-0 per cubic foot	1,104	8	8			
533⅓ Cubic feet of Achawood, at Rupee 0-6-0 per cubic foot	200	0	0			
	10,392	8	2			
Value of Sandalwood ready to be sold to Contractor	3,272	2	1			
Do. Teakwood do. ...	51	12	6			
				13,715	14	9

28. Bhowany Forest.—*Forest worked by the Overseer.*—This forest during the past year has been worked by Overseer Grant, who has performed his duties diligently.

29. *Jungle Conservation.*—The quantity of Sandalwood felled and stored amounts to 3,357½ Maunds, valued at Rupees 10,072-8-0.

30. *Formation of Plantations.*—A small experimental firewood plantation is being formed at Bhowany. The ground is covered with prickly-pear, the cost of removal is not less than 100 Rupees an acre. This fearful scourge is spreading rapidly in the Bhowany Talook, especially in the neighbourhood of the river. In many places access to villages is difficult; very inefficient measures have hitherto been adopted by the Tahsildar for its removal; the longer stringent measures for its removal are delayed, the greater will be the cost. The cost of removal is from Rupees 20 to Rupees 200 per acre.

31. *Government Cattle.*—The bullocks have been employed in drawing water for the nursery.

32. *Criminal Trespass.*—There have been several cases detected and punished by the Deputy-Collector.

33. *Jungle Operations.*—The operations have been preparing Sandalwood, felling some 1,000 tons of fuel for the supply of the railway, marking out a channel in the river Cauvery for floating fuel, blasting rocks, cutting a channel round the old Nerengapett anicut, to enable fuel rafts and boats to pass down the river without unloading, establishing depôts of timber at Sumbully and Erode, and putting a stop to the issuing of licenses, conserving the forests, &c., &c.

34. *Health of the Establishment.*—A great deal of fever in February amongst the Peons and Overseers.

	Rs.	A.	P.	
Seigniorage on Teakwood	220	0	0	
Do. Blackwood	9	0	0	
Do. Vengay wood	39	0	0	
Do. Junglewood	258	0	0	
Do. Acha wood	2,139	0	0	
Do. firewood, bamboos, charcoal and Valum bark rented ...	735	13	4	= Firewood 700 tons. Bamboos 300 loads.
Do. confiscated timber	175	0	0	
Do. Miscellaneous	20	0	0	
	3 595	13	4	
Sandalwood	8,000	0	0	
Total Revenue ...	11,595	13	4	

35. *Sale of Timber.*—The sale by license of Teak, Vengay, Acha, &c., amounts to Rs. 3,595-13-4, and of Sandalwood amounts to Rupees 8,000, making a total of Rs. 11,595-13-4, which has been carried to the credit of the forest.

36. *Stock of Timber.*—The quantity of timber unaccounted is as below:—

	Rs.	A.	P.
Value of timber unaccounted for on 31st March 1870...	427	8	0
Add timber felled in 1870-71	10,072	8	0
Total ...	10,500	0	0
Deduct timber sold in 1870-71	8,000	0	0
Balance ...	2,500	0	0

Particulars of the balances:—

Value of Sandalwood ready to be sold to Contractor ...	2,500	0	0

37. COLLEGAL FOREST.—*Forest worked by the Overseer.*—This forest has been worked by Overseer Appavoo Moodelly who has given every satisfaction.

38. *Jungle Conservation.*—The conservation of the jungles has been attended to carefully.

39. The quantity of Sandalwood felled and stored is 4,148¾ Maunds, valued at Rupees 12,446-4-0.

40. *Principal Operations.*—The operations have been felling and preparing Sandalwood; felling Vengay and other woods for the supply of the public; and to supersede the license system; and the formation of Sandalwood plantations.

41. *Sandalwood plantation.*—Last year an excellent site was selected for a plantation under the Bullyrungum Hills, where soil, water, and a suitable climate existed. Some 3,000 plants have been put out, thirty acres cleared of jungle and roots, and ploughed by elephants. It is intended to have fifty acres planted by the end of the year.

42. *Criminal Trespass.*—There have been several cases, but owing to the laxness of the Tahsildar (now pensioned) and the connivance of Monegars, it was found impossible to obtain convictions. The Acting Collector, Mr. Sullivan, visited Vylore, the site of the new Sandalwood Plantation, and inspected some of the Sandalwood land taken off by Monegars without authority: the damage done to young Sandalwood plants by these surreptitious clearings is great, and can only be put a stop to by severe punishments, and as there is no Deputy-Collector in Collegal, it is difficult to get any punishments inflicted; in fact, if forest-officers are to protect Government interests, due powers must be conferred on them, otherwise the Tahsildar contrives, from want of energy or otherwise, to make forest laws a dead letter. In my last Annual Report I laid stress on the fact that criminal prosecutions were a failure in Collegal. That a Monegar of a village should be able to give a puttah for land abounding in Sandalwood trees and situated far away from any village is subversive of all forest conservancy, and is a stretch of communal rights certainly not intended by Government. In many places villagers recklessly deprive themselves of their common jungles, and then resort to our heavier forest land; so long as this is permitted villagers will never help themselves by planting hedge row timber as is done in Mysore, where Neem and Babool may be seen growing abundantly in the hedge rows and often in the fields.

In Mysore the rent of dry land is fully as high as in Madras, and yet where scrub jungles are not available, the people have to plant and help themselves, and not rely on the Forest Department for help.

		Rs.	A.	P.	
Seigniorage on Teakwood		192	8	0	
Do. Blackwood		5	0	0	
Do. Vengáy		210	0	0	
Do. Junglewood		95	8	0	
Do. Firewood, bamboos, charcoal and Valum bark rented ...		585	0	0	= Firewood 500 tons. Bamboos 200 loads.
Do. Confiscated timber ...		1	6	0	
		1,089	6	0	
Sandalwood		10,500	0	0	
Total Revenue ...		11,589	6	0	

43. *Sale of timber.*—Sandalwood, &c., to the amount of Rupees 10,500 has been sold to merchants, and the seigniorage realized amounts to Rs. 1,089-6-0, or a total Rupees 11,589-6-0, which has been carried to the credit of the forest.

44. *Health of the Establishment.*—The usual amount of fever has prevailed.

45. *Stock of Timber.*—The quantity of Sandalwood unaccounted for on 31st March 1871 is as follows:—

				RS.	A.	P.
Value of timber unaccounted for on 31st March 1870 ...				7,334	3	0
Add timber felled in 1870-71				12,446	4	0
		Total ...		19,780	7	0
Deduct timber sold in 1870-71	10,500	0	0			
Do. destroyed by fire and white-ants ...	28	0	0			
				10,528	0	0
	Balance ...			9,252	7	0

Particulars of the balance:—

1,360 Maunds of Sandalwood, at Rupees 3 per Maund	4,080	0	0	
86 Cubic feet of Teak, at Rs. 0-10-0 per cubic foot.	53	12	0	
49⅔ Do. of Blackwood, at Rs. 0-12-0 do.	37	4	0	
118 Do. of Junglewood, at Rs. 0-8-0 do.	59	0	0	
	4,230	0	0	
Value of Sandalwood ready to be sold to Contractor...	5,022	7	0	
				9,252 7 0

I have the honour to be,
Sir,
Your most obedient servant,

(Signed) H. R. MORGAN, Lieut.-Colonel,
Deputy Conservator of Forests.

APPENDIX J.

OFFICE OF ASSISTANT CONSERVATOR OF FORESTS,
MANGALORE, 15*th May* 1871.

From

J. W. CHERRY, ESQ.,
Assistant Conservator of Forests, South Canara,

To

MAJOR R. H. BEDDOME,
Conservator of Forests, Madras Presidency.

SIR,—I have the honour to submit the Administration Report of the South Canara Range for the past official year.

Introductory Remarks, mentioning the name of the officer in charge, &c.

1. On the 10th of December 1870 I assumed charge of the Range from Mr. Deputy-Collector Ball, who had been placed in temporary charge on the illness of Mr. H. F. Winter.

My time has been almost entirely taken up at head-quarters, where a systematic arrangement of Head Office and Overseers' accounts, the perusal of records, the settlement of claim against Messrs. Mann & Co., the supply of timber to Bombay, and the establishment of a Timber Depôt at Mangalore necessitated my presence; which necessity was greatly enhanced by the insufficiency of the Office Establishment.

I have, however, been able to snatch now and then a few days which, with rapid travelling, have enabled me to circuit the Cassergode and Oopenangoody Talook Ranges, and to visit the Nerria Cardamom Jungles, the Parapu Teak Plantation, and a site for a teak garden on the Kavoi river, which the Collector requested me to see.

I have alluded above to the insufficiency of the Office Establishment; my experience of this Range, slight as it is, suffices to justify me in recording also in this report the insufficiency of the Executive or Conservancy Establishment.

These and other drawbacks to the proper and satisfactory working of this range have been constantly brought forward by my predecessors, and would have been largely commented on in this report, did not your replies to my several letters on the different subjects assure me that all these matters will be taken into consideration on the reorganization of the department, till which happy and long-looked for event, and pending the momentous change, it will appear impertinent for me to make any complaints or offer any suggestions.

Measures taken for extending, improving, or protecting the forests, &c.

2. An attempt is being made to work the ghaut-forests in this Range (tracts of enormous extent, and containing much valuable timber) departmentally.

These forests are considered to be our reserves, though they have not been demarcated or even defined.

Our work here has necessarily been confined to those portions rendered particularly valuable by the facilities of carriage to the coast.

Unfortunately these facilities are very rare, and when they do exist, their presence is a sure sign that the contiguous forests have already been denuded of much of their best timbers, of which they were despoiled some time before Government forest operations commenced.

Owing to the exceedingly difficult and expensive work of transporting timber from the ghauts to the coast, the attempt made by the department to draw from the ghaut-forests has up to this not been on the whole a success.

A reference to Appendix A. (being a rough extract from past accounts) will show that from the commencement of departmental working to the end of past year some Rupees 71,000 have

been disbursed in preparing and bringing to market forest-produce nominally valued at Rupees 99,452-7-9, and which has realized (with the estimated value of the timber now on hand) only Rupees 88,518-12-0, being a result of some Rupees 17,500 against the cost of the supervising staff of employés. The expense of carriage to the coast from the Cassergode forests has been excessive, and should never have been incurred for junglewoods or, in fact, for any timber that would not afterwards realize from Rupees 1-8-0 to Rupees 2 a cubic foot.

In the Oodipee and Coondapore Ranges carriage is a little easier, but it is doubtful whether any but the best timbers will bear the cost of removal.

From the Oopenangoody Talook alone does timber of all classes realize remunerative rates when brought to the coast, and as there is a very large market at Mangalore (at the mouth of the river which rises in the Oopenangoody forests), we may consider the Soobroomoony and Sirady forests in this talook at present the most valuable in the district, and they will continue to be so until expenditure on roads, blasting operations, purchase of elephants, &c., enable us to open up means of carriage from other vast forests of really more intrinsic value than the two abovementioned.

My predecessor's proposal to spend Rupees 1,000 on blasting operations in the Puisnanny river has not been carried out, nor do I think the expenditure of so small a sum alone on such an enormous undertaking at all advisable.

The pruning and conservancy of Teak saplings in the Soolia forest is being continued, and is bearing fruit with happy results in regard to the increased height of the trees. It remains, however, to be seen whether the trees are not being drawn up at the sacrifice of their girth, and whether, when a tree is once pruned, the expense of removing the consequent growth of suckers each year is not more than sufficient to counteract the advantage gained by using the knife in the first instance.

All the Government forest in this district outside the ghaut belt is supposed to be worked by the system of license and voucher, under which system fall the wargdah and ryot's "kumaky holdings." As the "*pros* and *cons*" of kumaky rights are now under consideration, it will not be out of place for me to offer here a few remarks on the subject.

These holdings, from their proximity to the coast, contain the most valuable timbers in the district.

From the time when we find kumakies with a defined existence, the commercial value of their timbers has been increased in proportion *with*, as they (the kumakies) probably have been the causes *of*, the destruction of the surrounding forests.

It has too often been assumed that the fact of good timber flourishing in these holdings, while surrounding Government land is bare, is "unimpeachable evidence (as Mr. Thomas, the Collector, says in his letter* to the Board), who are the best guardians and growers of timber trees," meaning thereby kumaky wargdahs.

* *Vide* Mr. Thomas' letter, No. 827, dated 5th September 1868.

I need hardly tell you that this is begging the whole question, and that the presumption may be just as fairly drawn the other way.

I cannot follow Mr. Thomas to the conclusions that, as all attempts of the department, aided by the Revenue authorities, have utterly failed to secure the forest-clad appearance for which this district was formerly noted, then, the only real conservancy has been that of the wargdahs and ryots.

It appears to me that the fact of Government conservancy having failed to save the country near the coast from being denuded, and that only in these isolated spots (kumakies) are firewood and valuable timber to be found is sufficient to justify the conclusion that the kumakies have been preserved at the sacrifice of the surrounding woodlands.

I hold that the kumaky-holder is in a great measure responsible for the present denuded state of the district, for he has not failed to use his kumaky privileges as a cover to enable him to take a *very large* share in the depredations which have brought about that state.

Had an adequate Government Forest Conservancy Establishment existed, and done its duty, the result would have been, *first*, the disappearance of all kumaky timber, but owing to the very great difficulty of any department or combination of departments being able to watch and preserve an enormous tract of Government forests, overrun by a net work of kumaky holdings; in a few years the ryots have succeeded in so exhausting all forests contiguous to their kumakies, that those holdings soon became the conspicuous objects which Mr. Thomas holds up as patterns of conservancy.

Nearest to the coast kumaky-holders, having stripped Government forest lands of all timber and even brushwood, are now forced to fall back on their kumakies, which are fast losing all their forest timbers.

Further inland the stripping process is not so far advanced, but is nevertheless in steady and sure progress.

If this denudation continues in spite of our most energetic (but at present very feeble) efforts to preserve the kumaky timbers by enforcing a few departmental rules, such as that which denies the right of a kumaky-holder to fell, free of seigniorage, other than certain trees conceded to him, or to fell trees on his kumaky lands for other purposes than those for his own use, how much more rapid will be the denudation of the plains, where, as I anticipate from recent correspondence and orders, all our departmental restrictions are withdrawn, and kumaky-holders will be at liberty to dispose in any way they please any class of timber now growing on their kumakies.

Should these restrictions be withdrawn, and, unless we can reduce the market value of timber by pouring into the coast depôts an immense stock at very low rates, I believe the timber merchants will very soon persuade the owner of every valuable kumaky timber tree to part with the same.

The system of license and voucher in this district does not extend beyond satisfying the timber requirements of the ryots.

Merchants, however, are permitted to cut bamboos under this system.

All timber for market is felled and carried by the department.

There are in reality, therefore, no regular license and voucher forests in South Canara.

The system might be a check to illicit felling, if some plan for recovering time-expired licenses was adopted, and provided it was made compulsory to carry all forest-produce in the district under a license from this Office.

At present, unless illicit felling is detected *on the spot*, any timber, once out of Government forest boundaries, may be carried away free of interference, as wargdah or private timber. The difficulty of preventing this is increased to an extreme by the unsettled and undemarcated state of our forest boundaries.

Owing to the large stock of timber in depôts, felling operations this year were not extensive, and realized produce valued in the forests at Rupees 5,515-4-0.

Felling operations were almost entirely confined to the Oopenangaddy Range.

This next year it is proposed to fell in the same range, and to prepare a few of the best timbers only in the other ranges.

Quantity of timber felled and stored in depôts, &c.

3. Appendix B. gives in detail the quantity of forest-produce prepared during the year, which cost Rupees 768-1-0 for felling, and Rupees 1,890-6-0 for dragging.

The rent of cardamom jungles was last year credited to land-revenue; this year it appears in the accounts of this department.

The increase in the sum realized for letting firewood jungles for working Sandalwood stills is this year very marked, Rupees 9,610 against Rupees 5,285 for last year.

The increased seigniorage rate on firewood (which is now 9 Pies a head-load) enables me to declare under that heading receipts aggregating Rupees 9,075-0-6, against Rupees 2,838-1-3 of last year.

Appendix C. shows the forest-produce floated during the year.

Floating expenses amounted to Rupees 4,572-12-6.

4. The cost of elephant hire during the year was Rupees 1,375. The department possesses eight useless buffaloes, who are supported at a cost of Rupees 60 a year. They appear ill-adapted to forest-work.

Elephants and other cattle and carts in the forest, &c.

5. Appendix D. shows the forest-produce disposed of during the year by license and voucher.

Timber, &c., removed by wood-cutters, &c., and timber, &c., felled on Free Passes, &c.

Revenue realized under this heading amounts to Rupees 6,140-4-11.

6. The amount realized during the year by the sale of confiscated timber is Rupees 648-14-9.

Number and Amount of confiscated logs, &c.

7. Appendix E. shows in detail the forest-produce disposed of during the year from depôts.

Timber of all descriptions sold from Government Depôts, &c.

The sums realized aggregate Rupees 7,195-0-5.

The nominal value (as shown in the accounts) of the stock in hand on the 31st March 1871 falls short of its present estimated value by Rupees 7,103-8-7, which sum has accordingly been written off under the heading of "Destroyed by fire, white-ants, &c."

I have endeavoured to show in Appendix F. how this loss has arisen; but as the stock accounts are by no means perfect, I am unable to show the reason for each *item* of gain and loss.

With the view of being able to submit more accurate stock statements in future, I have devised a form of "Stock Statement," which, if approved of, will accompany the monthly accounts.

Appendix G. gives this form which is filled up with imaginary items to facilitate comprehension.

Monthly and annual forms on this principle will admit of a comparison between value gained on each heading of stock in each range, and will show the gain or loss on realized rates over nominal rates for each class of forest-produce sold from each depôt.

This result is much to be desired, as enabling the Range Officer to ascertain what timber and what locality he is working to advantage.

The unperceived losses in working certain portions of this range have considerably reduced the net result of departmental working in the district.

8. Timber to the amount of Rupees 1,393-2-9 was sold from depôts to the Department of Public Works, who were also permitted to fell by their own agency timber to the value of Rupees 624-4-0.

Timber supplied to Public Departments, &c.

In all Rupees 2,017-10-9 have been passed by vouchers from the Department Public Works.

The timber marginally noted was shipped in March last by Pattimar to the Agent for the Gun Carriage Factory, Bombay.

Blackwood 264 cubic feet.
Teakwood 560 „
Wild Jack 1,139 „

There is some correspondence about the quality of the timber, so the value has not yet been received.

I have therefore included the timber in the Statement of Stock in hand.

The value to be received will be about Rupees 7,500.

9. The year's accounts closes without any outstanding advances.

Outstanding advances to be enumerated, &c.

10. The Teak Plantations at Parapu has been fully reported on in my half-yearly report due next month.

Plantations.

Suffice to say here that the expenditure for the year amounted to Rupees 480-4-4. A sum of Rupees 143-4-0 was spent last year in an endeavour to keep up the appearance of the Catechu plantation, which has nevertheless quite succumbed. There was therefore no expenditure incurred this year.

I have not yet been able to ascertain the reason for the Catechu failure.

Forest Products.

11. Nothing has yet been done to collect departmentally the gums, resins, nuts, &c., from the Government Forests.

Trespasses or damages committed in forests, &c.

12. There is a long list of forest offences for the year, which I have not thought it advisable to burden this report with.

The offence that occurs the most frequently is that of theft.

Health of the Forest Establishment, &c.

13. From the beginning of February the establishment have been constantly suffering from jungle fever, an evil which, by them, cannot be avoided, and if not compensated for by extra leave or allowance during the fever months, will tend to weaken the department very considerably.

Any valuable, new, or rare plants discovered, &c.

14. I am not aware of any new plant having been discovered in the district during the year.

Financial Results.

15. Appendix H., exhibited in the usual form, shows the financial results for the year.

You will observe that the estimated revenue has been exceeded by some 4,000 odd rupees.

I have the honour to be,

Sir,

Your most obedient servant,

(Signed) J. W. CHERRY,

Asst. Conservator of Forests.

A.

Statement showing the Departmental Preparation (with results obtained) of Forest Produce for market, since the official year 1861-62.

Years.	Expenses incurred on preparation of Timber, &c.			Nominal Value of Timber felled during each year.			Value of Timber sold during each year.			Value of Timber destroyed by fire, &c., during each year.			Estimated Value of Timber unaccounted at the end of each year.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
1862-63 ...	1,692	5	9	5,280	10	8	56	0	0	...	...	...	5,224	10	8
1863-64 ...	4,567	3	8	15,379	4	0	1,725	10	8	...	...	...	18,878	4	0
1864-65 ...	7,700	8	2	13,365	9	7	3,518	9	0	1,840	5	8	26,884	14	11
1865-66 ...	8,712	6	11	10,857	0	0	3,088	9	0	556	6	3	34,096	15	8
1866-67 ...	11,842	10	4	26,710	10	6	12,183	7	2	...	...	...	48,624	4	0
1867-68 ...	8,818	6	6	9,967	0	0	22,791	11	5	457	5	5	35,342	3	2
1868-69 ...	11,330	4	9	7,444	8	0	7,620	12	1	425	11	1	34,740	4	0
1869-70 ...	8,323	6	3	4,932	8	0	7,068	8	3	550	11	9	32,053	8	0
1870-71 ...	7,920	13	4	5,515	4	0	7,819	8	5	7,103	3	7	*22,646	0	0
Total ...	70,908	1	8	99,452	7	9	65,872	12	0	10,933	11	9	2,58,491	0	5

* On hand on 31st March 1871.

MANGALORE,
20*th May* 1871.

(Signed) J. W. CHERRY,
Asst. Conservator of Forests,
South Canara.

B.

Statement showing the Timber felled in South Canara Forests during the year 1870-71.

Names of Ranges.	Description of Timber.	No. of Logs.	Bombay Candies.	Remarks.
Cassergode Range ...	Teakwood ...	12	6	
	Bamboos ...	8,025	...	
Soobroomoony Range ...	Wild Jack ...	80	341½	
	Jackwood ...	3	15½	
	Kiral bogi ...	1	1¼	
	Teakwood ...	1	7	
	Blackwood ...	11	15½	
	Junglewood ...	226	427¾	
	Boat ...	1	...	
	Bamboos ...	7,000	...	
Oodupi and Cundapore Ranges	Junglewood ...	8	27	
	Bamboos ...	6,550	...	
Timber cut by the D. P. W. in Oodupi and Mangalore Ranges on seigniorage.	Wild Jack ...	3	5¾	Cut by the agency of the D. P. W.
	Kalponni ...	9	15¼	
	Jackwood ...	3	9	
	Kiral bogi ...	61	63¾	
	Junglewood ...	10	18½	

MANGALORE,
20*th May* 1871.

(Signed) J. W. CHERRY,
Asst. Conservator of Forests,
South Canara.

C.

Statement showing the Quantity of Timber floated in South Canara Forests during the year 1870-71.

Names of Ranges.	From what place to what place.	Description of Timber.	No. of Logs.	Bombay Candies.	Remarks.
Cassergode Range ...	From Adhoor to Cassergode.	Teakwood ...	28	56¾	
		Blackwood ...	41	110	
		Bamboos ...	5,837	...	
Soobroomoony Range.	From Bolupah, Yenecul, Seraady, &c., to Mangalore.	Wild Jack ...	26	93¼	
		Blackwood ...	10	10½	
		Kiral bogi ...	1	1¼	
		Junglewood ...	205	401¼	
		Mangowood ...	39	89½	
		Boat ...	1	...	
		Bamboos ...	5,000	...	
Oodupi and Cundapore Ranges.	From Hospett, Civaponi, Bochappa, &c., to Callianpore	Blackwood ...	63	30½	
		Junglewood ...	246	248	
		Bamboos ...	4,125	...	
	From Hollebugle to Cundapore ...	Do. ...	6,000	...	

MANGALORE,
20*th May* 1871.

(Signed) J. W. CHERRY,
Asst. Conservator of Forests,
South Canara.

D.

List showing the Timber, &c., felled and removed by Ryots and Merchants under License and Voucher system in South Canara Forests during the year 1870-71.

Reserved Timber	...	Bombay Candies. ...	260¾
Junglewood	...	do.	195¼
Palmyras, No.	...	... ...	20
Bamboos ,,	...	... ...	1,58,600
Charcoal, Murrahs	...	... ...	2,000

MANGALORE,
20*th May* 1871.

(Signed) J. W. CHERRY,
Asst. Conservator of Forests,
South Canara.

E.

List showing the Teak, Blackwood, &c., sold from the Depôts of the South Canara Forests during the year 1870-71.

Names of Ranges.	Description of Timber.	No. of Logs.	No. of Candies.	Amount realized.			Total.		
				RS.	A.	P.	RS.	A.	P.
Cassergode Range ...	Teakwood ...	220	268	763	12	3			
	Blackwood ...	21	40½	123	11	3			
	Ebony ...	1	1½	2	0	0			
	Jackwood ...	2	2¼	4	0	0			
	Junglewood ...	51	107¼	326	15	10			
	Bamboos ...	6,225	...	336	0	0			
							1,556	7	4
Soobroomoony Range.	Teakwood ...	4	9	97	8	0			
	Blackwood ..	14	22	286	6	9			
	Wild Jack ...	64	159	1,289	6	0			
	Jack ...	7	18¼	137	0	0			
	Junglewood	122	179	1,203	8	1			
	Kiral bogi ...	20	48¼	292	0	0			
	Bamboos ...	16,200	...	999	0	0			
							4,304	12	10
Oodupi and Cundapore Ranges.	Kiral bogi ...	42	14¾	88	8	0			
	Junglewood ...	132	205½	1,404	4	3			
	Bamboos ...	8,600	...	465	8	0			
							1,958	4	3
	Total ...	...	...	...	...	...	7,819	8	5
Deduct Timber felled by D. P. W.							624	8	0
Sold from Depôts							7,195	0	5

MANGALORE,
20*th May* 1871.

(Signed) J. W. CHERRY,
Asst. Conservator of Forests,
South Canara.

F.

Statement of Stock for the year showing Increase and Decrease in Value of each item.

Description of Timber.	Balance of Stock brought forward from last year's Accounts.				Stock felled during the year.				Total.				Stock sold during the year.				Stock unaccounted for during the year				Difference.							
	No. of Logs	Estimated Value.			No. of Logs.	Estimated Value.			No. of Logs.	Estimated Value.			No. of Logs.	Value realized.			No. of Logs.	Estimated Value.			No. of Logs.	Increase.			Decrease.		
		Rs.	A.	P.		Rs.	A.	P.		Rs.	A.	P.		Rs.	A.	P.		Rs.	A.	P.		Rs.	A.	P.	Rs.	A.	P.
Teakwood...	232	2,388	0	0	13	78	0	0	245	2,466	0	0	224	861	4	3	26	1,193	2	0	+ 5	...	...	...	411	9	9
Blackwood.	340	5,215	12	0	11	93	0	0	351	5,308	12	0	35	410	2	0	310	6,734	6	0	— 6	1,835	12	0	...	...	...
Ebony ...	2	18	0	0	...	...	...	...	2	18	0	0	1	2	0	0	2	11	14	0	+ 1	...	...	...	4	2	0
Wild Jack.	147	1,675	0	0	92	2,175	0	0	239	3,850	0	0	64	1,289	6	0	175	1,868	6	0	...	...	...	...	692	4	0
Jackwood...	5	104	0	0	6	147	0	0	11	251	0	0	9	141	0	0	3	71	10	0	+ 1	...	...	...	38	6	0
Kiral bogi...	35	228	0	0	62	378	0	0	97	606	0	0	62	380	8	0	36	27	8	0	+ 1	...	...	...	198	0	0
Poon Spars.	61	1,830	0	0	...	...	...	...	61	1,830	0	0	...	...	...	...	61	305	0	0	...	...	...	...	1,525	0	0
Junglewood.	1,822	14,775	0	0	234	1,947	0	0	2,056	16,722	0	0	305	2,934	12	2	1,630	10,901	0	0	— 121	...	...	...	2,886	3	10
Mangowood.	239	3,211	0	0	...	...	...	...	239	3,211	0	0	...	...	...	...	239	717	0	0	...	...	...	...	2,494	0	0
Boats ...	15	380	0	0	1	50	0	0	16	430	0	0	...	...	...	...	16	93	0	0	...	...	...	...	337	0	0
Bamboos ...	54,975	2,228	12	0	21,575	647	4	0	76,550	2,876	0	0	31,025	1,800	8	0	19,275	723	2	0	— 26,250	...	...	...	352	6	0
																						1,835	12	0	8,938	15	7
																					Deduct Increase ...				1,835	12	0
Total ...		32,053	8	0		5,515	4	0		37,568	12	0		7,819	8	5		22,646	0	0	Net Decrease ...				7,103	3	7

Mangalore,
20*th May* 1871.

(Signed) J. W. CHERRY,
Asst. Conservator of Forests, South Canara.

G.

Specimen Stock Statement for May 1871, Oopinangady Range Forest Depôts.

Depôts.	Class.	Headings.	Quantity.	Cubical Contents in Feet.	Nominal Rate.	Nominal Value.	Realized.	Gain.	Loss.	Net Results. Gain.	Net Results. Loss.	Remarks on Gain and Loss.
					Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	
Soobroomoony Depôt.	Blackwood.	Stock on 1st May 1871 ...	100	1,000	0 8 0	500 0 0	... ...	... ...	... ...	... ...	... ...	
		Do. added during the month	100	1,500	0 11 0	1,031 4 0	... ...	... ...	... ...	... ...	... ...	
		Total ...	200	2,500	*0 9 9	1,531 4 0	... ...	... ...	... ...	... ...	... ...	
		Stock sold on 1st May 1871	50	750	†0 9 9	457 0 6	562 8 0	105 7 6	... ...	... ...	... ...	By sales.
		Do. do. ...	50	750	†0 9 9	457 0 6	375 0 0	... ...	82 0 6	... ...	... ...	Do.
		Balance	100	1,000	... ...	617 3 0	609 6 0	... ...	7 13 0	... ...	... ...	By depreciation in value.
		Total ...	200	2,500	... ...	1,531 4 0	1,546 14 0	... ...	... ...	15 10 0	... ...	
	Benteak.	Stock on 1st May 1871 ...	2	10	0 8 0	5 0 0	... ...	... ...	... ...	... ...	... ...	
		Do. added during the month	1	10	... ...	10 0 0	... ...	... ...	... ...	... ...	... ...	
		Total ...	3	20	*0 12 0	15 0 0	... ...	... ...	... ...	... ...	... ...	
		Stock sold on 1st May 1871	1	10	†0 12 0	7 8 0	5 0 0	... ...	2 8 0	... ...	... ...	By sales.
		Lost while under water carriage	1	5	†0 12 0	3 12 0	... ...	... ...	3 12 0	... ...	... ...	By destruction.
		Balance ...	1	5	... ...	3 12 0	3 12 0	... ...	... ...	... ...	... ...	
		Total ...	3	20	... ...	15 0 0	8 12 0	... ...	... ...	... ...	6 4 0	
	Teakwood.	Stock on 1st May 1871 ...	2	10	1 0 0	10 0 0	... ...	... ...	... ...	... ...	... ...	
		Do. added during the month	1	10	0 8 0	5 0 0	... ...	... ...	... ...	... ...	... ...	
		Total ...	3	20	*0 12 0	15 0 0	... ...	... ...	... ...	... ...	... ...	

G.—*Continued.*

Specimen Stock Statement for May 1871, *Oopinangady Range Forest Depôts.*

Depôts.	Class.	Headings.	Quantity.	Cubical Contents in Feet.	Nominal. Rate.	Nominal. Value.	Realized.	Gain.	Loss.	Net Results. Gain.	Net Results. Loss.	Remarks on Gain and Loss.
					Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	
Soobroomoony Depôt	Teakwood.	Stock on 1st May 1871 ...	1	10	†0 12 0	7 8 0	15 0 0	7 8 0	... ...	... ...	... ...	By sales.
		Under transport to Mangalore Depôt	1	5	†0 12 0	3 12 0	3 12 0	... ...	... ...	... ...	... ...	
		Balance ...	1	5	... ...	3 12 0	3 12 0	... ...	... ...	... ...	... ...	
		Total ...	3	20	... ...	15 0 0	22 8 0	... ...	... ...	7 8 0	... ...	

* Approximate average rate. † Calculated at approximate average rate.

MANGALORE, 20*th May* 1871.

(Signed) J. W. CHERRY,
Asst. Conservator of Forests, South Canara.

H.

Financial Results of the South Canara Forests for the official year 1870-71.

Receipts.

	RS.	A.	P.	RS.	A.	P.
I.—(*a.*) Sale of Timber brought to Depôt by Government agency	5,801	13	8			
(*b.*) Value of Timber supplied to D. P. W.	2,017	10	9			
II.—Sale of Timber, Bamboos, &c., removed from the forests by purchasers, including seigniorage	6,140	4	11			
Sale of confiscated Timber	648	14	9			
V.—Sale of Cardamoms	67	0	0			
Rent of Sandalwood Stills and Firewood for ditto., and rent of Cardamom Jungles	19,485	0	6			
Miscellaneous, &c.	1	6	2			
Total Receipts				34,162	2	9

Expenditure.

I.—Timber Expenses for felling, clearing, sawing, and transport of Timber by land or water to Depôts	6,345	1	4			
II.—Purchase of Tools	140	12	0			
III.—Feed and keep of hired Elephants and Forest Buffaloes	1,435	0	0			
V.—Charges connected with the collection of Forest Produce	17	15	4			
V.—Plantation	542	14	4			
X.—Communications, buildings, &c., and minor works	221	13	4			
Total of Conservancy and Working				8,703	8	4

B. Establishment.

I.—Salaries—						
Pay of Assistant Conservator of Forests	2,486	10	8			
Do. Office Establishment	420	0	0			
Do. Forest Conservancy Establishment	3,492	0	0			
Deputation and Special Allowance ...	45	0	0			
II.—Travelling Allowances—						
Assistant Conservator of Forests ...	682	5	2			
Subordinate Establishment	525	0	0			
III.—Office Contingencies	194	4	8			
Total of Establishment				7,845	4	6
Total of Expenditure						16,548 12 10
Balance in favour of Government						17,613 5 11
Balance of Timber in Depôt on 31st March 1870.	32,053	8	0			
Add Timber felled during the year	5,515	4	0			
				37,568	12	0

	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Deduct sold to Public Works, &c., in 1870-71...	7,819	8	5						
Dò. damaged	7,103	3	7						
				14,922	12	0			
Balance of Timber in hand				22,646	0	0			
Value of Timber on hand on 31st March 1870...	32,053	8	0						
Deduct value of Timber on hand, 31st March 1870.	22,646	0	0						
Decrease in Stock ...	9,407	8	0						
Deduct Decrease in Stock							9,407	8	0
Net balance in favour of Government							8,205	13	11

MANGALORE,
20th May 1871.

(Signed) J. W. CHERRY,
Asst. Conservator of Forests.

APPENDIX K.

No. 19.

OFFICE OF ASSISTANT CONSERVATOR
OF WYNAAD FORESTS,
MANANTODDY, *26th April* 1871.

From

HENRY F. WINTER, ESQ.,
Assistant Conservator of Forests, Wynaad Range.

To

COLONEL H. R. MORGAN,
Deputy-Conservator of Forests, Ootacamund.

SIR,—*Wynaad Forests.*—I have the honour to forward the Annual Reports of the forests for the official year 1870-71, out of which eleven months and twenty-six days had passed before I took over charge.

2. The amount sanctioned for the year for conservancy and working charges was Rupees 6,000, for establishment Rupees 5,874, making a total of Rupees 11,874. Out of this amount Rupees 4,987-14-11 has been paid for felling, floating, and carting (Rupees 712-13-6 was paid for timber floated by Mr. Turnbull in September 1868), and Rupees 4,928-5-8 for establishment and office contingencies, leaving Rupees 1,957-11-5 of sanctioned amount not spent.

3. *Receipts.*—From the accounts I see that very little timber has been sold, only 2,093⅛ cubic feet, at fifteen annas per cubic foot, amounting to Rupees 1,962-8-0; for 1,257⅜ cubic feet lost in the river whilst being floated to Hirnandy Depôt, at Rupees 1 per cubic foot, equal Rupees 1,257-12-0; and 27$\frac{7}{32}$ cubic feet lost in the river at 12 annas per cubic foot, equal Rupees 20-11-0, making a total of Rupees 3,240-15-0; bamboos Rupees 5, total Rupees 3,245-15-0.

4. *Timber felled.*—The quantity of timber felled during the year is 10,234⅛ cubic feet of Teak, at 14 annas per cubic foot, equal Rupees 8,955-3-0.

5. *Floating.*—During the last year 7,239⅜ cubic feet of timber was floated to Hirnandy Depôt.

6. *Carriage.*—792 logs, equal to 12,789¼ cubic feet, were carted to Mysore Depôt.

7. Timber sold from depôt amounts to 2,093¾ cubic feet, at 15 annas per cubic foot, amounting to Rupees 1,962-8-0.

8. Timber supplied to Public Works Department. There was no demand for timber from the Public Works Department.

9. *Stealing Timber.*—Overseer Iyasawmy Naidu reported to the Deputy-Collector of Manantoddy in January that a Vedumala Pillay had cut thirty-five valuable logs and 100 jungle trees, but there seems to have been no inquiry made into it. As soon as I have despatched the official accounts, I intend proceeding to the Chedleth Forests and making further inquiries into the matter, and try and prosecute the man.

10. *Health of Establishment.*—There have been only three cases of fever during the last year. Sub-Overseer Kather Nevaz Khan of Chedleth Forests was laid up for a few days with fever. Two Peons were also laid up with fever.

11. *Demarcation.*—There seems to be some dispute about the boundaries in Pambray Forests and some forests belonging to a Nair at Chedleth. I am informed that the demarcation stones put down by the late Lieutenant Fullerton, Deputy-Conservator of Forests, are not to be found, and that there is only one man, Raman Nair, living at Sultan's Battery that knows where the stones were put. I request that I may be allowed to engage him for two months to show me all the demarcation stones.

12. *Subordinates.*—From what I have seen of the Subordinates during one month and two days, they seem to be doing their work very satisfactorily, with the exception of one Peon, Mahomed Mustan, who is in charge of Hirnandy Depôt; I hear that he is always going to Mysore. I also found some of the timber at Hirnandy Depôt cut with a knife to see what wood it was.

13. I left Manantoddy on the 11th March 1871, and went to Gundry Depôt and examined all the timber there. On Sunday I went on to Untersenta through the forests. On Monday morning I rode into Humpapore and examined all the logs at Hirnandy Depôt. On Tuesday I rode into Chottnelly and stopped there; the next day I rode into Mysore, and went and examined the timber in the depôt. I was detained in Mysore for ten days, having all the logs in Mysore Depôt numbered and measured. I also had to hand over some timber Mr. Turnbull had sold to a timber merchant in Mysore, with whom I had a great deal of trouble before I could bring him to terms; but he thought better of it, and I handed him over 195 logs of Teak before I left Mysore. Before leaving Mysore I ordered him to go to Hirnandy Depôt and be there on 25th March.

I left Mysore on the 25th March and rode into Humpapore and delivered him over the remaining timber at Hirnandy Depôt; then I made my way on to Manantoddy and arrived here on the morning of the 30th March.

14. *Operations.*—I intend felling 5,000 cubic feet of Teak (Tectona grandis) in the Coodracotta forests, and some Blackwood (Dalbergia latifolia) logs in the Chedleth forests, and have them taken into Mysore, and see what price I can get for the same.

I have the honor to be,
Sir,
Your most obedient servant,

HENRY F. WINTER,
Assistant Conservator of Forests, Wynaad.

APPENDIX L.

CAMP NELAMBUR, 15*th May* 1871.

From

J. FERGUSON, ESQ.,
Assistant Conservator of Forests,

To

MAJOR R. H. BEDDOME,
Conservator of Forests.

SIR,—I have the honour to submit the Annual Administration Report of Nelambur Range for the past official year 1870-71.

2. *Felling Operations.*—Timber logs, Teak, 250 and junglewood 500, and of the above dragged into Forest Depôt 200 and 400 respectively; also 1,277 timber logs, and 4,075 saplings, with 6,250 bamboos, floated during the season by the temporary establishment.

3. Hired elephants were employed for the above work.

4. Cash realized by sale of stock and remitted to the treasury was Rupees 14,821-15-11, inclusive of Rupees 1,287-1-5 appertaining to the previous year's sales and paid only in April 1870, as also Rupees 1,227-10-10, the value of twenty-eight Teak logs supplied to the Marine Department, Bombay, in March 1870, and adjusted in July by transfer receipt through the Accountant-General, Madras, making a total of receipts for the year of Rupees 16,049-10-9, and value of stock in market Rupees 13,986-10-7, and in Forest Depôt Rupees 6,840, giving a total of Rupees 20,826-10-7 to be accounted for during 1871-72.

5. *Plantations.*—Planted out during the season Teak seedlings 75,000, also 4,500 Sappanwood seedlings, forming a separate plantation; these with the older ones fully maintain the usual rate of growth.

6. *Forest Demarcation and Survey.*—The Survey Party stopped work in April, and resumed it again in September 1870, and continued till March 1871. This season the Survey Party suffered very severely from fever. Forests demarcated and surveyed lies north-east towards the Carcoor Pass, viz., Eddum, Badum, Morrian, and Korien, a small part of the latter is the Jem property of the Nelambur Rajah, the remaining portion, with the two former forests, are the Jem property of the Trickalyur Devasem; also the Nellicuthu Forest has been demarcated and surveyed, and is the Jem property of the Calicut Zamorin Rajah, aggregating twenty-five miles of a Boundary Circuit. Charges have been paid through the Survey Department for the season, and a sum of Rupees 321-7-0, charges incurred by me the previous season, is now adjusted.

7. *Floating Operations.*—Have been carried on with a temporary establishment, and floated 1,200 odd logs, 4,000 and odd saplings, with 6,250 bamboos.

8. *Plantation.*—Nurseries for fuel-reserves and contemplated operations therein, none.

9. *Reserved Forest Operations.*—To fell and transport to Forest and Market Depôts 1,200 logs of the different sorts of timber.

10. License and voucher forests and operations, none.

11. Yield of forests for the year, Rupees 12,115-12-0.

12. Expenditure for the year on Teak Plantations Rupees 6,883-4-0, and Sappanwood Rupees 50-2-0.

13. *General Remarks.*—There is a slight improvement in the sales for this over last year's, but owing to the depressed state of the market, with a reduction of thirty per cent. on former

year's prices, 500 odd logs remain unsold in the depôt. To effect a clearance of this, every endeavour was made before the close of the year, but we had no offer that could be effected. Floating operations we have been pretty successful, although high rates were paid both for men and elephants. Planting was carried on at Nellicuthu, which is very sickly. Two Duffadars died from fever contracted there, as also several Peons left prostrated. The Overseer in charge, Mr. Newman, (a very promising young officer) was very much cut up with fever and dysentery ; took leave in May returning only in November, and had an immediate relapse. He was replaced by Mr. Meppen from Annamallay Forest, who was found unsuitable. I regret the frequent unavoidable changes of Overseers, and the Subordinate Establishment has greatly retarded and curtailed operations for the past as well as during the current year. Next year planting will be commenced in the new forest leased from N. Soobramanian Numbudripad, much more healthy and convenient for supervision than Nellicuthu. I regret to state I have had repeated attacks of fever myself this season, which greatly disables me for enduring exposure to the sun and the fatigue of supervising operations as much as I could wish, so far from head-quarters.

14. *Operations* :—

75	acres planted with 75,000 Teak seedlings.
2½	,, ,, ,, 4,500 Sappanwood seedlings.
2,695	,, of plantation weeded.
625	,, pruned.
40	,, site for fresh planting prepared.
750	logs of Teak and junglewood felled.
600	,, dragged into Forests Depôt.
1,277	,, transported to Market Depôt.
4,075	saplings ,, ,,
6,250	bamboos ,, ,,

ORDER THEREON, 16th April 1872, No. 609.

THE Government proceed to review the results of forest conservancy in each range, but before doing so, they resolve clearly to lay down the principle on which the "net surplus," which may be yielded by the Forest Department as a whole or in any range, is to be calculated. In his report for 1869-70, the Conservator observed that "the proper financial result is the excess of receipts over expenditure without any reference to a deficit or surplus of stock in hand;" and he has since justified this mode of calculation on the plea that his department has never received credit for the existing stock in hand—a statement which is, however, partially contradicted by the fact that from 1862-63 to 1865-66, during which years the stock in hand *increased*, the Conservator always took credit on a valuation of the increase. This was the correct course for adoption; but now when the stock in hand (or capital) of the Forest Department is decreasing, it is obviously improper to carry the amount of diminution to the head of Income. The "net surplus" of a year must always include a reference to increase or decrease of stock in hand, and the annexed table shows, in column 8, the results of forest conservancy since 1862-63 thus calculated. In the year under review, the expenditure was Rupees 2,94,860, the receipts Rupees 3,39,762, and the increase in the value of stock in hand Rupees 24,437. The "net surplus" was therefore Rupees 69,339:—

Year.	Cash Expenditure.	Cash Receipts.	Difference between Columns 2 and 3.	Value of Timber in Depôts.	Increase of Value during the Year.	Decrease of Value during the Year.	True Result of the Year calculated on Columns 4, 6 and 7.
1	2	3	4	5	6	7	8
	RS.	RS.	RS.	RS.	RS.	RS.	RS.
1862-63 ...	1,75,768	1,82,334	6,566	4,82,361	1,86,809	...	1,93,374
1863-64 ...	2,04,303	2,43,642	39,339	5,78,873	96,512	...	1,35,851
1864-65 ...	1,96,658	3,30,569	1,33,911	6,47,703	68,830	...	2,02,741
1865-66 ...	2,59,802	3,21,581	61,779	6,89,663	41,959	...	1,03,738
1866-67 ...	2,17,149	3,38,607	1,21,458	6,78,536	...	11,127	1,10,331
1867-68 ...	2,72,840	4,24,184	1,51,344	5,94,816	...	83,720	67,624
1868-69 ...	2,69,700	3,91,179	1,21,479	5,24,388	...	70,428	51,051
1869-70 ...	2,86,691	4,95,789	2,09,098	4,06,261	...	1,18,131	90,967
1870-71 ...	2,94,860	3,39,762	44,902	4,30,698	24,437	...	69,339

2. *Gumsoor and Suradha* (*Ganjam.*)—This range is in charge of Overseer McCally. The receipts during the year amounted to Rupees 5,992-15-6, and the expenditure to Rs. 3,091-1-4. The balance of Rupees 2,901-14-2 is reduced by a diminution in the value of stock to a net surplus of Rupees 2,749-2-2. For 1869-70 the net surplus calculated on the same principle was Rupees 3,822-10-8. The quantity of timber (exclusive of firewood) removed from the forests during the last two years is shown below:—

Year.	Departmentally.	On License.	Free.
	C. FT.	C. FT.	C. FT.
1869-70	10,410	83,255	15,440
1870-71	860	84,030	24,520

The Government infer from Overseer McCally's reports that the forests under his charge are capable of supplying a larger quantity of timber without permanent injury to their resources, and

the falling off in revenue is ascribed by him to the cessation of demand on the part of the Department Public Works. The Government resolve to call the attention of the Superintending Engineer, 1st Division, to paragraph 4 of G. O. dated 4th February 1871, Department Public Works, No. 352, and the Conservator will endeavour to meet the convenience of the Department Public Works officers by every means in his power. It is highly desirable that the Department Public Works should draw its timber from forests where skilled supervision guards against detriment to natural resources; but to admit of this, the Conservator must have a stock of well-seasoned and suitable timber always in store at convenient depôts. The small experimental plantation formed by the Overseer in 1869-70 is reported to be thriving.

3. *Kurnool.*—This range was during the year under the supervision of Mr. R. W. Morgan. The expenditure during the year amounted to Rupees 9,122-0-7, the receipts to Rupees 44,922-9-6, and there was a decrease in the value of stock to the extent of Rupees 292-2-8. The net surplus of the year is, therefore, Rupees 35,508-6-3 against Rupees 36,624 of 1869-70 and Rupees 34,783 of 1868-69. Mr. Morgan's report is defective in many respects, and the Government are unable to reconcile his figures with those given in paragraphs 158 and 159 of the Conservator's report. On the assumption that the latter are correct, the subjoined statement shows the extent of felling during the last two years :—

Year.	Departmentally.	On License.	Total.	Free.
	C. FT.	C. FT.	C. FT.	C. FT.
1869-70	.....	350,920	350,920	11,340
1870-71	402	233,500	233,902	10,000

The annual drain upon the forests in this range is, according to the Conservator's figures, far greater than in any other, but even allowing, for the circumstance, that nearly all the timber is felled on licenses, the receipts are by no means proportionately large. At the close of last year the value of the timber in stock amounted to only Rupees 1,514, or less by Rupees 292 than at the commencement. During the year, therefore, 233,500 cubic feet *plus* the value* of Rupees 292 were removed from the forest. Leaving the latter amount out of the question, and comparing the former amount with the "receipts on sale of timber removed by purchasers," the result obtained is that an average of 2 Annas per cubic foot, or Rupees 2-8-0 per bandy-load of 20 cubic feet, was realized; the seigniorage rates ranging from Rupee 1 per bandy-load for unreserved timber to from Rupees 2 to Rupees 6 for the reserved kinds.

* The Government do not understand the system of valuation adopted in this range, and are, therefore, unable to estimate the value in timber of Rupees 292.

4. The Conservator will, in future, endeavour to distinguish the quantities taken out of the forest under each rate of seigniorage, and the Government suggest, for consideration, the expediency of adding to the reserve of 200 square-miles which was formed in 1869-70, as the demand on the forest appears to be so large. The opinion of the Collector is desired on this point. The Conservator will consider whether the reserved tract should not be worked departmentally in preference to the license-system. No timber was supplied to the Department Public Works during the year under review, but this stoppage of demand on their part is unexplained. Three artificial plantations are reported on by the Assistant Conservator. The Government much regret to learn that man-eating tigers are still so seriously destructive on the Nandycanama Pass.

5. *Cuddapah.*—This range which, up to 1869-70, was administered jointly with that of North Arcot is now the sole charge of Mr. Yarde. The gross receipts of the year were Rupees 46,301-9-10, the charges Rupees 21,329-4-8, and the increase in the value of stock Rs 4,114-4-3. Thus the net surplus on the year was Rupees 29,086-9-5, against Rupees 36,303, in 1869-70

and Rupees 38,368 in 1868-69. The increase in expenditure is doubtless partly due to the assignment of the range as a sole charge, but the falling off in revenue is principally ascribed to the European war which stopped the sale of Red Sanders. The timber in hand at the close of the year was valued at Rupees 22,534-5-9. From the information furnished by Mr. Yarde and the Conservator, the Government conclude that this stock was composed of 2,111,609 lbs of Red Sanders and 2,571 cubic feet of timber. In this as well as in other ranges the particulars as to stock and its estimated value should be more clear and condensed. The subjoined statement shows the quantity of timber removed from the Cuddapah forests during the last two years :—

Year.	Departmentally.	On License.	Total.	Free.
	C. FT.	C. FT.	C. FT.	C. FT.
1869-70 ...		1,36,460	1,36,460	24,000
1870-71 ...	...	1,33,240	1,33,240	3,780

In his report for 1869-70 the Conservator commented (paragraph 140) in strong terms on the heavy indents which had been made on the lowland forests of this range, and stated (paragraph 143) that "as there was a supply of timber in depôts and not much demand from them, little or no timber would be felled during the year (1870-71) by the department." The Government request that Major Beddome will explain his reasons for subsequently authorizing a different course, whereby the stock in hand has been increased. There is probably some mistake in the figures under "free." The Government trust that Mr. Yarde will use his best endeavours to prevent disforestment in his range. His plan of allotting the patches of forest in which Railway Fuel Contractors are permitted to fell is judicious, *provided he takes care that they leave a sufficient quantity of growth to aid re-production.* In this case also it appears to Government preferable for the forest officer to work the tract departmentally rather than by license and voucher. The attention of the Acting Collector will be drawn to the remarks at the conclusion of Mr. Yarde's report regarding the evasion by the ryots of the rule requiring them to obtain passes for timber to which they are entitled free of charge.

6. *North Arcot*—This range now forms the sole charge of Mr. Sheffield. The gross receipts, during the year were Rupees 13,948-1-6, the expenditure Rupees 8,478-6-6, and the increase in the value of stock Rupees 1,952-8-0, the net surplus on the year being, therefore, Rupees 7,422-3-0 against Rupees 2,948 in 1869-70 and Rupees 6,000 in 1868-69. The extent of felling during the last two years is shown below :—

Year.	Departmentally.	On License.	Total.	Free.
	C. FT.	C. FT.	C. FT.	C. FT.
1869-70 ...	...	31,688	31,688	3,080
1870-71 ...	...	25,810	25,810	Not stated.

If the large expenditure on plantations be taken into consideration, the financial results of the year (on the assumption that the forests are not over-worked) are creditable to the Assistant Conservator; but his report is principally devoted to the artificial plantations on which a special report has already been laid before Government. Considerably more than half the revenue in this range is derived from the sale of bamboos and jungle-wood; but Mr. Sheffield's figures, though elaborate enough in respect of the *sale-proceeds* of the various items of forest-revenue, leave the Government quite in the dark as to the quantity sold under each item, and the rate at which it was sold. The Government regret to learn from paragraph 112 of the Conservator's report that

"smuggling" is so rife, but the Collector has adopted rigorous measures to check it which, it is hoped, will meet with success. The Conservator's remarks in advocacy of the collection by the department of forest-products have been noted, and will be referred to hereafter. In the meantime, the Government see no objection to departmental collection of these products in *reserved* tracts, which, they infer from paragraph 115 of the report, it is the Conservator's intention to establish. The Trivellum Casuarina plantation is so promising that the additional 1,000 acres of land, which Mr. Sheffield says can be had between Arcot and Amboor, should be obtained and planted without delay.

7. *Salem.*—This important range is reported on by Mr. J. Nisbet, of whose death the Government have lately heard with much regret. The subjoined statement shows the fiscal results attained in it during the last three years :—

Year	Gross Receipts.	Gross Disbursements.	Deficiency of Stock.	Net Surplus.
	RS.	RS.	RS.	RS.
1868-69 ...	66,820	28,420	Not stated.	...
1869-70 ...	64,707	29,641	3,707	31,359
1870-71 ...	64,675	16,833	1,277	46,565

The decrease of expenditure in the year under review is note worthy. The "*sale of timber removed by purchasers*" represents by far the largest item of revenue, but considerable sums were realized under the heads of "sale of timber at depôts" and "sale of fruits, etc." The particulars as to quantity and value of stock sold are too meagre and confused to admit of exhibition in a tabulated form. The appended figures show the extent of felling during the last two years:—

Year.	Departmentally.	On License.	Total.	Free.
	C. FT.	C. FT.	C. FT.	C. FT.
1869-70 ...	8,420	18,887	27,307	44,996
1870-71 ...	5,020	20,113	25,133	57,423

The Tripatore and Denkenicottah forests are worked almost entirely departmentally, but the Salem forests in which the license and voucher-system is in force appear by far the most productive. A fair proportion of the revenue realized in this range is obtained from Sandalwood which fetched during the year under review an average price of more than Rupees 4 per maund, or Rupee 1 in excess of the valuation rate generally adopted in this Presidency. It appears to the Government that an artificial Sandalwood plantation might be formed with advantage in this district. The railway fuel reserves (five in number) between Mullapuram and Shervaroy Hill stations were fire-traced during the year at a total expenditure of Rupees 1,065, but in spite of this precaution fire broke out in two of them, and caused some damage. Four more tracts (between Ahtoor and Mullapuram) were selected by Mr. Nisbet as fuel-reserves during the year, but the subsequent illness of that officer prevented the ascertainment of their area. From Mr. Knox's report of 1870, the Government gather that there are in all four plantations in the Salem range. Of these the plantation on the Shervaroys is now reported a failure, and the Conservator proposes to retain it for experimental purposes only.

8. *South Arcot.*—The forests in this range are reported on by Mr. H. L. Wooldridge, who took charge of them in November 1870. The gross receipts during the year were Rs. 3,270-8-5, the expenditure Rupees 3,508-0-4 and the increase in the value of stock Rupees 544-15-5. The net surplus on the year, therefore, was Rupees 307-7-6 against Rupees 2,283 in 1869-70 and Rupees 81 in 1868-69. This result, which is calculated from the Conservator's figures, differs from that arrived

at by Mr. Wooldridge in paragraph 18 of his report, in which he refers to a tabular statement no where to be found in the Appendix. The falling off in net revenue during the year under review must mainly be ascribed to the increase of expenditure under the head of "Salaries," owing to the appointment, in August 1870, of an Assistant Conservator, the range having up to that date been administered jointly with that of Salem. The South Arcot range possesses four fuel-reserves; but the information furnished regarding them is meagre. The artificial plantations stated to be very thriving are under the Revenue authorities and supported from the Jungle Conservancy Fund.

9. *Madura.*—This range, as well as those of Tinnevelly, Trichinopoly, and Tanjore was, during the year under review, administered by Lieutenant C. J. Walker, whose zeal and regard for system deserve recognition by Government. The financial results of the Madura range for the last three years are shown below:—

Year.	Expenditure.	Receipts.	Difference in Value in Stock.	Deficit on the Year.
	RS.	RS.	RS.	RS.
1868-69	6,134	10,523	— 5,479	1,090
1869-70	9,006	4,418	+ 2,964	1,624
1870-71	17,604	9,626	+ 4,856	3,122

The annually recurring deficit is partially due to the slackness of demand for timber, especially on the part of the Department Public Works. It is much to be feared that the numerous Zemindars in the range, or their lessees, are under-selling the department at the risk of ruining their forests. The Superintending Engineer, 8th Division, is requested to report from what sources the timber used by the Department Public Works in the Madura and Tinnevelly ranges is obtained. Another reason assigned for the small returns realized by the department is the extent to which "free felling" is carried on. The subjoined statement, contrasting the returns of timber felled in the Madura forests during the last two years, shows a more than three-fold increase under the head of free felling.

The increase under the head of free firewood is large, but is probably only apparent and really due to more accurate returns. When compared with the population of the Government taluqs, the highest figure gives a most trifling quantity per head per annum:—

Year.	Departmentally.	On License	Total.	Free.	
	C. FT.	C. FT.	C. FT.	C. FT.	
1869-70 ...	2,210	9,884	12,094	10,856	—
1870-71 ...	9,704	13,472	23,176	37,246	

The attention of the Acting Collector of Madura will be called to the alleged extensive and increasing issue of free Permits, and he will be requested to confer with the forest officers on the subject. Lieutenant Walker has taken a step in the right direction by demarcating in two taluqs tracts of jungle to which, with the permission of the Collector, free felling is restricted. The Deputy-Conservator has endeavoured as far as possible to substitute departmental felling for the license and voucher-system, and several new depôts have been opened. The departmental work, however, is still in the hands of contractors, and the Deputy-Conservator recommends to his successor the organization of a "complete system of departmental establishments for felling, sawing, dragging, and carting timber." The average rate of sale of Government timber sold from the depôts was Rupees 1-2-0 per cubic foot, but that of timber sold on licenses and vouchers is not given, and the particulars requisite to a comparison of the remunerative character of the two systems are entirely wanting. There are three plantations in the Madura range, situate respectively in the Cumbum Valley, on the Pulney Hills, and in the Pulney Taluq near the foot of the hills. All three were extended during the year under review, but the first and last-named are not spoken of in very encouraging terms.

10. *Tinnevelly.*—This range also, during the year under review, formed part of Lieutenant Walker's charge. Mr. Hayne, a newly appointed Assistant Conservator, whose capacity and industry are testified to by the Deputy-Conservator, has been in immediate charge since January. The Tinnevelly range is more profitable from a financial point of view than that of Madura. The financial results of the last three years are shown below:—

Year.	Expenditure.	Receipts.	Increase in Value of Stock	Net Surplus.
	RS.	RS.	RS.	RS.
1868-69	7,001	13,708	No stock in hand	6,707
1869-70	9,208	20,489	353	11,634
1870-71	15,708	21,242	4,392	9,926

No timber was supplied to the Department Public Works during the year, and the remarks on this point made with reference to Madura are applicable also to Tinnevelly. Timber valued at Rupees 4,745 remains in depôt. In this, as in the Madura range, the existence of a large stock in hand for which purchasers cannot be found, ought to operate in restricting felling during the current year. The extent of felling during the last two years is shown below:—

Year.	Departmentally.	On License.	Total	Free.
	C. FT.	C. FT.	C. FT.	C. FT.
1869-70	235	1,02,604	1,02,839	8,910
1870-71	3,892	72,973	76,865	3,348

The spread of departmental agency to the exclusion of the license and voucher-system is a satisfactory feature in the report, but there is still much room for improvement in this respect. The attention of Mr. Puckle will be called to Lieutenant Walker's remarks on the tendency of the ryots to help themselves to timber without obtaining free passes. No artificial plantation has yet been formed, or is projected, by the department in this range.

11. *Anamalay, Bolumputty, and Chenat Nair.*—The Anamalay range, which severely taxes the energies of the officer in charge of it, has been during the year administered by Mr. C. G. Douglas. The Government note with pleasure the intelligence which this officer, who has only recently joined the department, displays in his report, and the care which he takes to justify his conclusions by figures. The financial results of the last three years in the Anamalay range are shown below:—

Year.	Expenditure.	Receipts.	Cash Result.	Difference in Value of Stock.	Net Deficit.
	RS.	RS.	RS.	RS.	RS.
1868-69	31,045	30,489	— 556	—24,722	25,278
1869-70	38,616	88,915	+ 50,299	—75,469	25,170
1870-71	48,207	17,517	—30,690	+21,299	9,391

A stock of timber, valued at Rupees 1,37,656, still remains on hand, and the Government do not understand why, when such an excess of timber remains undisposed of, the Conservator did not decide earlier that felling should be stopped for a year or two in order that expenditure might be lightened and an even balance maintained between demand and supply. The expenditure is increasing annually, and is so large that were it not for the stock of timber accumulated in the early days of forest conservancy, a heavy annual loss would result from the working of these rich forests. On reference to the Forest Administration Reports, it appears that the gross expenditure in the Anamalay range from the commencement of operations to the close of the year under review has amounted to Rupees 5,05,990. The receipts during the same period have been Rupees 7,74,631,

and to this sum must be added the value of the stock of timber on hand on 31st March 1871 (Rupees 1,37,656), which gives Rupees 9,12,287 as the gross receipts of the department since its commencement. Deducting from this sum the amount of gross expenditure, a balance of Rupees 4,06,297 remains, representing the net surplus realized up to this date in the Anamalay range, which distributed over fifteen years, gives Rupees 27,086 as the average profit per annum. This average is now rapidly decreasing, and the Government desire that the Conservator will explain why expenditure now produces results so much smaller than it did some years ago. It is obvious that either the expenditure in this range must be considerably reduced, or the price of timber considerably increased. The decrease in revenue in the year under review is very fully explained by Mr. Douglas, who assumed charge too lately to have been able to apply any sufficient remedy. The depôt at the foot of the slip should not have been allowed to become empty while the outlying depôts above the ghauts were full of timber. This want of foresight prevented the despatch of timber supplied to the Bombay Marine in sufficient time to allow of its reaching Bombay by January, the limit of the period within which the timber must be delivered, if its sale-proceeds are to be reckoned on as part of the year's receipts. For conveying timber the services of contractors are employed to a considerable extent, but Mr. Douglas shows that the work is performed at a cheaper rate by the "Government Cart Establishment." His remarks on the expediency of increasing this establishment are commended to the Conservator's attention. On the question of the most economical method of transporting timber to the coast, the Conservator agrees with Mr. Douglas, who has gone carefully into the subject, that the old method of floating is cheaper than the recently adopted plan of carriage by rail. Nearly all the teak sold in this range is supplied to the Bombay Marine Department, and the Conservator should report why their indent for 1871-72 has been withdrawn. Major Beddome's decision to discontinue felling for the current year is fully approved.

12. *Bolumputty and Chenat Nair.*—The financial results for the last three years of these forests, which were under Mr. Douglas during 1870-71, are shown below:—

Year.	Gross Expenditure.	Gross Receipts.	Difference in Value of Stock in Hand.	Net Result.
	RS.	RS.	RS.	RS.
1868-69	8,166	4,477	+6,880	+3,191
1869-70	6,246	13,351	—7,959	— 854
1870-71	9,574	3,854	— 687	—6,207

The expenditure appears large in proportion to the receipts, but this must partly be ascribed to the large expenditure on plantations (Rupees 4,233). The extent of felling during the last two years is shown below:—

Year.	Departmentally.	On License.	Total.	Free.
	C. FT.	C. FT.	C. FT.	C. FT.
1869-70	3,118	400	3,518	not stated.
1870-71	326	3,179	3,505	2,078

The increased issue of licenses and proportionate contraction of departmental operations is unsatisfactory. The Assistant Conservator's explanation is that the Overseer in charge was so much occupied with plantations and reserves that he was unable to superintend felling, and consequently the Bolumputty seigniorage collections are almost the only item of receipt. The Bolumputty Hills contain the source of more than one important stream, and last year Captain Gosling strongly protested against any measures likely to lead to their denudation. The Government, therefore, view with apprehension any increased reliance on them for revenue, and

Paragraph 71 of his Report for 1869-70.

desire to be informed whether anything has been done towards carrying out Captain Gosling's suggestion, that certain denuded spots should be replanted with Teak and Rosewood, and whether there is any objection to bringing these hills under departmental agency. The Bolumputty, etc., range contains fine reserves and plantations. Considerable progress has been made with the Walliar reserve. The information under this head is meagre, and in future the artificial plantations in the range should be treated of in full detail. All particulars as to the rate at which licenses for timber were issued are wanting.

13. *Mudumallai.*—These forests together with those of Seegur and Sattiamungalam, Bhowany, and Collegal have been managed by Lieutenant-Colonel Morgan. The financial results of the last three years in the Mudumallay range are shown below:—

Year.	Gross Expenditure.	Cash Receipts.	Difference between two preceding Columns.	Difference in Value of Stock.	Net Result of the Year.
	RS.	RS.	RS	RS.	RS.
1868-69	49,795	60,014	+10,219	—12,348	— 2,129
1869-70	47,380	47,978	+ 598	—27,975	—27,377
1870-71	39,617	15,184	—24,433	— 5,978	—30,411

In spite of the heavy indents which the last three years have witnessed, timber, valued at Rupees 1,40,524, still remains in stock. The extent of felling during the last two years is shown below:—

Year.	Departmentally.	On License.	Total.	Free.
	C. FT.	C. FT.	C. FT.	C. FT.
1869-70	22,402	None.	22,402	Not stated.
1870-71	3,154	None.	3,154	Not stated.

All the felling is departmental. Owing to the present slack demand for timber, it has been decided to stop felling during the current year, except for purposes of conservancy. The figures given by Colonel Morgan show that the stock in hand is entirely composed of teakwood valued at rates varying between Rupees 1-8-0 and Annas 12 per cubic foot. The remarks in paragraph 10 regarding economy of administration are also applicable to the Mudumallay range. Felling is carried on at a loss, that is to say, the average annual sale-proceeds of timber do not equal the average annual cost of working the forests, exclusive of the expenditure involved in planting operations. The twenty-acre teak plantation in this range, commenced in 1864, continues to progress favourably.

14. *Seegur and Sattiamungalam.*—The financial results of the last three years in this range are shown below:—

Year.	Gross Expenditure.	Cash Receipts.	Difference between two preceding Columns.	Difference in Value of Stock in Hand.	Net Result of the Year.
	RS.	RS.	RS.	RS.	RS.
1868-69	7,431	23,359	+15,928	—11,666	+4,262
1869-70	10,700	21,465	+10,765	— 2,262	+8,503
1870-71	6,725	16,390	+ 9,665	— 3,425	+6,240

Of the receipts for last year Rupees 14,000 was realized by the sale of Sandalwood. A stock of timber, valued at Rupees 13,716, still remains on hand, of which Rupees 8,379 represents the

value of Sandalwood at Rupees 3 per maund, or Rupees 60 per candy. This rate, it is assumed, represents the average selling price of Sandalwood in this and other ranges. On reference to the Mysore Administration Report for 1869-70, the Government observe that the average price for Sandalwood realized by the department in that province was Rupees 89-15-0 per candy. It is possible, therefore, that a better market may, by the exercise of care, be found for the Sandalwood produced in this Presidency. The extent of felling during the last two years is shown below:—

Year.	Departmentally.	License and Voucher.	Total.	Free.
	C. FT.	C. FT.	C. FT.	C. FT.
1869-70	None.	4,760	4,760	Not stated.
1870-71	None.	10,580	10,580	Not stated.

The experiments in the Sandalwood plantation belonging to this range are still carefully carried on, and 3,000 fresh plants were put out during the past year.

15. *Bhowany.*—The financial transactions of this range during the last three years are shown below:—

Year.	Gross Expenditure.	Cash Receipts.	Difference between two preceding Columns.	Difference in Value of Stock.	Net Result.
	RS.	RS.	RS.	RS.	RS.
1868-69	6,046	15,856	+9,810	+ 171	+9,981
1869-70	5,623	14,377	+8,754	—1,099	—7,655
1870-71	8,046	11,596	+3,550	+2,073	+5,623

Of the receipts for last year, Rupees 8,000 were realized on Sandalwood. The value of the stock in hand at the close of the year was Rupees 2,500, consisting entirely of Sandalwood. Felling in the Bhowany range is conducted entirely on the license and voucher-system. Cubic feet 15,460, not including Sandalwood, having been felled in 1869-70, and cubic feet 18,040 in 1870-71.

16. *Collegal.*—The subjoined statement exhibits the financial results of this range:—

Year.	Gross Expenditure.	Cash Receipts.	Difference between two preceding Columns.	Difference in Value of Stock.	Net Result.
	RS.	RS.	RS.	RS.	RS.
1868-69	6,806	15,339	+ 8,533	— 460	+ 8,073
1869-70	7,629	18,828	+11,199	+5,183	+16,382
1870-71	6,988	11,589	+ 4,601	+1,918	+ 6,519

Of the receipts in last year, Rupees 10,500 were due to the sale of Sandalwood. The stock in hand at the close of the year was valued at Rupees 9,252, of which Rupees 9,102 represents the value of Sandalwood; felling in this range is conducted entirely on the license and voucher-system, and 3,760 cubic feet of timber were felled in 1869-70 and 2,680 in 1870-71. A Sandalwood plantation has been formed on the Ballyrungum Hills, and 3,000 plants were put out during the past year. The financial transactions of the Seegur, Bhowany, and Collegal ranges are conclusive as to the remunerative character of Sandalwood conservancy, and the Government are confident that Colonel Morgan will foster and extend the growth of this valuable tree by all the means in his power.

17. *Wynaad.*—This range was under the charge of Mr. J. W. Cherry up to December 1870. Mr. H. F. Winter did not assume charge of it until four days before the expiration of the official year. The Assistant Conservator's report is, therefore, necessarily brief and cursory. The following statement shows the transactions of the Wynaad range according to the Conservator's figures:—

Year.	Gross Disbursements.	Cash Receipts.	Difference between two preceding Columns.	Difference in Value of Stock.	Net Result of the Year.
	RS.	RS.	RS.	RS.	RS.
1868-69	8,219	381	—7,836	—21,552	—29,390
1869-70	11,078	10,794	— 284	+31,419	+31,135
1870-71	9,916	3,246	—6,670	—21,894	—28,564

Since the report was submitted, the Government have ascertained that the figures given for the two last years are fallacious. The Conservator has, both in the report for 1869-70 and in that for 1870-71, exhibited the value of timber embezzled by Overseer Turnbull as part of the stock in hand on the 31st March 1870, but has deducted it from the value of the stock in hand on 31st March 1871. The loss by Overseer Turnbull's defalcation had been shown in the accounts of 1868-69, but owing to an order of Government pointing out that sanction for writing it off had not been obtained, which sanction was afterwards accorded by Government Order, dated 21st February 1871, No. 326, the Conservator has exhibited the loss as a part of the results of 1870-71. This confusion would have been avoided if the Conservator had given retrospective effect to the Government Order last quoted. Mr. Winter reports that during the year under review, only 2,093 cubic feet of timber were sold at the rate of 12 Annas per cubic foot. The small sale of stock is due in great measure to the duty imposed by the Mysore Authorities upon timber sold at the Mysore depôt—a question which has been separately dealt with by Government. Cubic feet 5,825 of timber were felled in 1869-70 and Cubic feet 10,234 in 1870-71; felling being entirely conducted by departmental agency. Mr. Cherry in his report for 1869-70 estimated "that with 30 miles of well-laid out cart-road, and with two elephants and a few bullock-carts, 20,000 cubic feet (of Teak alone) might be extracted annually from the forests without depriving them of any timber which would not be ripe enough to spoil, if allowed to stand." The Government are very anxious that full justice should be done to the Wynaad forests and they will attentively consider any propositions which may be laid before them for rendering timber available which is at present virtually inaccessible.

18. *Nellambur.*—This range has been for several years under Mr. J. Ferguson. Its financial results are shown below:—

Year.	Gross Expenditure.	Cash Receipts.	Difference between two preceding Columns.	Difference in Value of Stock.	Net Results.
	RS.	RS.	RS.	RS.	RS.
1868-69	17,308	15,906	—1,402	—7,419	—8,821
1869-70	18,414	10,454	—7,960	—2,692	—10,652
1870-71	20,806	16,050	—4,756	—8,245	—13,001

Out of last year's expenditure Rupees 6,351 were spent upon plantations, but the steady increase of the total charges shows that they require careful watching. A stock of timber valued at Rupees 21,750 still remains on hand owing to the dull state of the market. 7,500 cubic feet of timber were departmentally felled during the year under review, and 11,515 cubic feet in 1869-70. The affairs of this range call for no further comment, except in respect of the teak plantations which occupy much of the Assistant Conservator's time. Since last year's report, 75,000 fresh seedlings

have been planted out. The Nellambur (Conolly) Teak plantations are unrivalled any where, and a large share of this success is due to the unflagging personal exertions of Mr. Ferguson. The Government are much indebted to him for his industry and professional skill, and they learn with regret that his health has latterly suffered.

19. *South Canara.*—Mr. J. W. Cherry assumed charge of this range in December 1870. His report contains valuable statistical information in a condensed form. The financial transactions of the last three years are shown below:—

Year.	Gross Expenditure.	Cash Receipts.	Difference between two preceding Columns.	Difference in Value of Stock in Hand.	Net Result.
	RS.	RS.	RS.	RS.	RS.
1868-69	21,864	30,064	+ 8,200	— 802	+ 7,398
1869-70	16,963	30,600	+13,637	—2,687	+10,950
1870-71	16,569	34,168	+17,599	—9,407	+ 8,192

Timber valued at Rupees 22,646 still remains on hand, and owing to the difficulty of disposing of this stock, it is proposed to limit felling during the current year. Statement F. in the Appendix to the Assistant Conservator's report would appear to show that the value of the stock in hand as estimated by Mr. Cherry exceeds its valuation in the accounts, but this is not rendered at all clear, and there is an error in the figures pertaining to "Jungle-wood" and "Bamboos" which vitiates the calculation. The Assistant Conservator should be required to explain the point more fully, and to state his reasons for writing off the amount of the difference under the head of "Destroyed by fire, white-ants, etc." Of the receipts Rupees 19,485 are classed under the head of "Permit fees" in which are comprised rent of Sandalwood stills and firewood for ditto and rent of cardamom jungles. The last-named item is now, for the first time, credited to forest-revenue, and it has, therefore, operated in increasing the receipts as compared with the preceding year. The extent of felling during the last two years is shown below:—

Year.	Departmentally.	On License.	Total.	Free.
	C. FT.	C. FT.	C. FT.	C. FT.
1869-70	9,342	10,715	20,057	Not stated.
1870-71	10,938	5,928	16,866	Not stated.

The abatement in the issue of licenses is satisfactory. The Assistant Conservator states that they are solely issued for the personal requirements of ryots.

20. In all the ranges during the year cubic feet 75,656¼ were felled by departmental agency, and the receipts by "sale of timber at depôts" amounted to Rupees 87,674-11-3. The value of the stock in hand was increased by Rupees 24,437. The particulars requisite to an estimate of the increase by cubic feet are wanting, but assuming (for the purpose of approximate calculation) that the valuation-rate and the rate of sale are identical, the sum of Rupees 1,12,112 represents the realizable sale-proceeds of a stock of timber equal to that departmentally felled during the year. This gives an average selling rate of Rupees 1-7-8 per cubic foot. The total quantity felled under the license and voucher-system was 640,057 cubic feet, and the aggregate receipts under the same system were Rupees 1,71,248-0-4, showing a sale-rate of Annas 4-3 per cubic foot. There is, therefore, no doubt that the system of departmental felling is infinitely the more directly remunerative of the two, provided working charges are kept within due bounds, and its superiority in point of economy of timber and prevention of fraud is probably still more marked. The Government will at all times favourably consider any schemes which may be laid before them for extending departmental management.

21. Several officers of the department state that illicit felling tells heavily against the receipts in their ranges, and the Conservator again advocates a law enabling his department "to challenge timber on a line of carriage when uncovered by a Pass-port." The question of a Forest Act is under consideration, but it would not appear from the returns referring to forest-offences contained in the report under review, that Magistrates, as a rule, exhibit a reluctance to punish illicit felling under Section 379 of the Penal Code, if the act itself can be proved.

22. Another feature in the Forest Conservancy of this Presidency which is much criticised, is the small results obtained from forest products, *ex. gr.*, Cardamoms, Gall-nuts, Ginger, Turmeric, etc. The Government trust that Major Beddome will before long submit the definite proposals for this matter which the Government have already told him they are prepared to consider.

23. The form of the Administration Reports for the last two years shows a considerable improvement over previous years, owing in part to the adoption by the Conservator of the suggestions conveyed in Government Order, dated 7th October 1869, No. 2,742 (paragraph 2), but it was not the intention of Government that the Conservator should put himself to the trouble of summarising in full detail the transactions of a range, except for the purpose of pointing a remark. The reports of the Range Officers forming the Appendix, which pass through the Conservator's hands supply all the statistical information required, and the Conservator should exhibit this to Government in a condensed form by employing a few tabular statements similar to those contained in paragraphs 158 and 159 of the report now under review. For the rest he need only dwell upon the general and salient features of the year under each head of the report, explaining where explanation is called for, and reconciling any apparent discrepancies.

24. But in order that the Appendix may be relied on to this extent, it is necessary to prescribe greater care and exactitude in the exhibition of the results of the year on the part of the Range Officers. Trivial details, the disposal of which is within the authority of the head of the department, are quite out of place in annual Administration Reports, and a tendency to introduce matter of this description characterises several of the reports sent in by Assistant Conservators; but a more important defect is the barrenness of statistical details, and absence of any attempt at accounting for alterations in expenditure and receipts (in some cases very marked both with reference to the budget-estimate and to the transactions of the preceding year) which characterise most of the reports. The aid of tabular statements should be called in much more frequently than it is now, and the following forms which should be appended to the report of each officer are prescribed for use :—

25. Statement A. should show the receipts and disbursements of the range under the heads adopted by the Conservator in paragraph 159 of his report, with the addition of a column for "Remarks," but the heading "Timber Expenses" should, if possible, be sub-divided into (1) cost of felling, and (2) cost of conveyance to depôt. Statement B., which is designed to exhibit in detail the extent of departmental felling (where this system is in force), should be as follows :—

Division of Range.	Description of Timber and other Forest-produce.	No. of Cubic Feet.	No. of Maunds.	Rate of Valuation per Cubic Foot.	Ditto per Maund.	Total Valuation.
1	2	3	4	5	6	7
					Total...	

Columns 3 and 5 are intended for timber and columns 4 and 6 for Sandalwood, Red Sanders and other forest-produce, usually estimated by weight which is collected departmentally and brought to a depôt. The cubic foot and the Indian Maund should be uniformly adopted in the department as the units respectively of measurement and weight for all stock, except firewood which as now can be estimated by tons, and bamboos which can be reckoned by the cartload. Where, therefore, stock of this description is collected to any considerable extent by departmental agency and sold from a depot, separate columns should be added.

Statement C., which is subjoined in blank will exhibit in detail the sales from each depôt during the year, and will supply a test of the accuracy of the valuation or the sufficiency of the sale proceeds:—

Name of Depôt.	Description of Timber or other Forest-produce; number of Cubic Feet or Maunds sold and rate of Valuation per Cubic Foot or Maund.	Total Valuation.	Total Amount actually realized.	Difference between Columns 3 and 4.	Explanation of Difference.
1	2	3	4	5	6
	Total...				
		Total showing aggregate increase or decrease ...			

Statement D. should contain the particulars of stock in hand at the commencement and close of the official year, showing the extent of increase or diminution as follows:—

Description of Timber or Forest-produce.	Number of Cubic Feet.	Number of Maunds.	Rate per Cubic Foot or Maund.	Total Valuation.
1	2	3	4	5
Total...			Total...	
Add total valuation of timber and forest-produce felled during the year as per column 7, Statement B.				
			Total...	
Deduct total valuation of timber, etc., sold during the year as per column 3, Statement D.				
Compare remainder with total under column 5				

Statement E. will have reference solely to timber, etc., disposed of under the license and voucher-system, and will be drawn up as follows. The total receipts should correspond with those in Statement A., head II of Receipts.

Description of Timber or Forest-produce.	Number of Cubic Feet.	Number of Maunds.	Rate of Seigniorage or sale per Cubic Foot or Maund.	Total Receipts (under each Head.)
1	2	3	4	5
			Total...	

26. The details given in these statements will place the Government in possession of all the statistical information required. The tabular statement appended this year to most of the reports embodying a return of trials for forest-offences occupies too much room, and should be discontinued. The facts can be briefly stated in the body of the report.

27. In respect to the principle on which valuation of timber is conducted, the information at present before Government is very defective. The Conservator is requested to submit a statement showing the different rates at which the existing stock in hand is valued, and roughly comparing these rates with the prices realized.

28. A forest map of the Presidency would often be a great assistance in the disposal of questions affecting conservancy, and ought, therefore, to be gradually drawn up range by range as opportunities offer. Such a map should show clearly the extent and situation of all important forests; a separate tint distinguishing each according as it chiefly abounds in Sandalwood, Teak, Sal or any other of the valuable descriptions of timber. The timber depôts, plantations, fuel-reserves should be marked as well as the large towns, railways, main roads and lines of communication which are depended on for the conveyance of timber; and forests departmentally worked should, if possible, be distinguished from those under the license and voucher-system.

29. In conclusion, the Government desire to acknowledge the intelligent zeal generally manifested by the officers of the department in the discharge of their duties; but they would impress on them the impolicy of increasing stocks beyond the requirements of the market, and what the exigencies of conservancy may demand in the way of felling ripe timber.

30. In future the Conservator's printed Report should bear the date of despatch in print.

(True Extract.)

(Signed) W. HUDLESTON,
Officiating Chief Secretary.